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ORIGINAL ARTICLES.

DISEASES AND TREATMENT OF NASAL ACCESSORY SINUSES, WITH AN ANALYTICAL REPORT.[1]

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THE etiology of diseases of the nasal accessory sinuses, and their relative frequency, have been receiving considerable attention from thoughtful observers. I have opened six frontal sinuses externally which contained polypoids and pus, and the mucous membrane was found to be undergoing polypoid degeneration. In one case the sinus was opened externally through the anterior wall of the ethmoid cells and the floor of the sinus. This case was due to an extending necrosis from the anterior ethmoidal cells. The membranes were swollen and granular, but there were no polypi.

Two cases of fronto-ethmoidal necrosis were opened through the nose by removing the anterior end of the middle turbinated body, the internal or median wall of the infundibulum and a part of the floor of the frontal sinus. The causes of the necrosis could only be inferred. In polypoid cases I have entered the frontal sinus through the nose many times. The chronic cases which have come under my observation, if considered in an etiologic sense, were about eight to ten in favor of polypoid degeneration.

In ethmoid disease (if we exclude the polypi cases which were not producing suppuration in the cells or bones), about two-thirds of the cases were caused by the polypoid process; the others were due to atrophic rhinitis, and its forerunner, suppurative rhinitis, to non-syphilitic necrosis, supposed to be due to retention of infective secretion, to syphilis, and to new growths. The sphenoidal cases bear about the same ratio. I have three cases of sphenoidal empyema under observation at the present time, all of which have been opened through the anterior upper walls, and they can be probed, curetted, and inspected through these apertures. Two were of polypoid and one of syphilitic origin.

From an etiologic standpoint, morbid conditions of the antrum of Highmore are exceedingly interesting. After carefully considering the evidence presented in my series of cases, I have been led to the conclusion that the nose and the teeth are about equal as causal factors of the grave forms of antral disease. In several of my most serious cases of the latter, which were of dental origin, I was principally led to that conclusion by circumstantial evidence, as the teeth had given the patients no trouble for many years, and nothing abnormal was noticed by the dentists who had them in charge. In certain ones I believed that a tooth was the offending cause, chiefly because the odor and character of the dislodged antral secretion indicated necrotic bone, the absence of any information in the general history pointing to any other origin, and the existence of a suspicious tooth, especially when it contained a large filling and had a devitalized color. In some of the cases the fillings were removed and a collection of offensive pus and gas was found at the ends of the roots, which communicated with the antrum; subsequent extraction of the tooth and penetration of the antrum through the alveolus confirmed the diagnosis and cured or relieved the patient.

I will not undertake, in this paper, to explain the causes of polypoid degeneration. I have watched it in all stages and ages, on the ethmoid bone, and on the walls of the respective sinuses. I have seen the flat varieties disappear under favorable conditions, the tissue returning to a normal state without surgical interference. The pedunculated forms have always required some mechanical or chemical remedy. The watery infiltration seems to affect only certain persons who have a peculiar predisposition.

The diagnostic points have been rather fully considered in my previous papers. I desire to emphasize the point that the silver irrigation tube and the small trocar and cannula are invaluable aids in cases of doubtful and difficult diagnosis. The tube should be passed through the natural opening when possible. The trocar and cannula can be passed through the internal wall of the antrum just below and posterior to the hiatus semilunaris, directing the point downward and outward through the wall of the inferior meatus, and through the canine fossa.

The general pathology of each of these cases should be carefully thought out before the operation is undertaken, although not so much depends upon

[1] The author's first paper on this subject was read before the Section of Laryngology and Rhinology of the New York Academy of Medicine, January, 1893, and was published in the New York *Polyclinic* for February and March, 1895. A second paper was read before the same Section, January, 1895, and published in THE MEDICAL NEWS, March 28, 1896.

the pathology as upon the extent of the process. Polypi do not signify much, but the degree of degeneration means a great deal. A small carious or necrotic area at the end of the tooth-root is usually cured easily after the extraction of the tooth. Burrowing periostitis, extending over the floor and a part of the walls, will frequently get well after drainage has been established and irrigation properly carried out. It is in this class of cases that great injury is done by what is termed "thorough curetting." The membrane is separated from the bone by pus cavities after the manner of fistulas. If the membrane is not removed, it will, under proper treatment, frequently regain a rather normal appearance, the apparent granulations and infiltrations disappearing, and will reunite to the supposedly carious bone beneath.

In those cases where the symptoms and history indicate that the bone disease has existed for many years, I have usually found necrosis varying in area and depth. The dead bone must either be curetted away, or we must wait for Nature, under favorable conditions, to throw it off. The necrosis which penetrates the cancellated parts of the superior maxilla and involves the septa between the tooth-roots, is most tedious in progress and difficult to cure. Retained fermenting secretions create a pathologic condition of their own, which is chiefiy a state of hyperemia, infiltration, and irritation, with a proneness to excessive and abnormal secretions. These cases may be associated with a definite pathologic lesion, or may be kept up by the leaven from old-time degenerating matter; surgical interference will relieve the former while irrigation will frequently cure the latter.

Since our treatment must be governed by the pathologic state within the cells, and since in some cases it is impossible to determine the exact tissue changes, we must divide the treatment into expectant, exploratory, and positive methods. In all acute and subacute cases it is our duty to use the expectant or the exploratory method. In the chronic cases, where there has been not only decided destruction of the tissues, but new formations in the way of tough granulations, polypi, devitalized and necrotic bone, surgical interference is imperative. There are many cases where the evidence points conclusively to necrotic changes within the hidden area.

The expectant treatment consists of restoring the nasal chambers to their normal condition, either by surgery or by chemicals, the use of soothing and disinfecting sprays or applications, the gentle introduction of tubes and irrigation of the sinuses through the natural openings, together with attention to the general health of the patient.

Exploration in antral disease is carried out by simple penetration and irrigation of the cavities through the canine fossa, the walls of the middle and inferior meati, and by Zeims' method. "When the set of teeth is complete the opening is made on the inner side, either between the first and second molars, or between the first molar and second bicuspid." In disease of the frontal sinus and sphenoidal cells, exploratory procedures, which consist of enlarging the natural openings by forcible dilatation or by moderate curetting, frequently afford relief, and in some cases effect a cure.

When we come to a consideration of the cases of sinus disease which demand radical surgical relief, many problems confront us—problems which the recorded experience of the best authors does not seem to solve. In going over the literature upon the subject I have failed to find a description of the pathology of each individual case, a factor which we must appreciate before we can institute and carry out our treatment in an intelligent and logical manner. One author will report a series of cases cured by a certain method, and yet, when one attempts it in a half-dozen instances, it often fails. There are hundreds of cases of sinusitis in which the sinus contains muco-pus without a solution of continuity of the mucous membrane. Nearly all of these cases are cured by tapping, and many of them will recover without any interference, as the disease is more or less intermittent in its course. On the other hand, cases which have existed for many months, and which are accompanied by a rather constant mucopurulent and purulent discharge, with other evidences pointing to necrotic conditions of varying degrees, demand adequate surgical interference.

I have operated upon patients by nearly every method that has been advocated, and the milder types have done well in every instance. There are other cases of the extreme types in which I have successfully used several of the methods which seemed to me to be the most plausible. For instance, in some of the frontal polypi cases I have succeeded in arresting the discharge and relieving the symptoms by the intranasal method. There are several others in which I tried this method for a long time and failed. The cause of the failure was clearly evident when I finally opened the sinus externally. In some of these cases it was remarkable that death had not ensued in consequence of the necrotic and carious condition of the posterior wall of the sinus. In Case III. of my series I pleaded with the patient to permit me to open his left frontal sinus, but he absolutely refused the external operation, and did very well for about one year. After several months ab-

sence from my office he reported and informed me that the sinus had been giving him some pain with very unpleasant symptoms in that region, and that he would consent to the operation. He stated that he would have to go home and arrange some business matters, and would return prepared to undergo the operation at the end of two weeks. Several days later I received a letter from his wife saying that he had suddenly been taken very ill. with head symptoms and loss of intelligence, and had died within a few days. There is every reason to believe that this patient would have been cured had he submitted to the external operation. In his case, although the antrum had been opened through the tooth socket, it had to be reopened on account of the natural closure of the cavity. The polypi continued to recur and trouble him; many of them were never curetted away on account of the inability to use the instrument properly through the opening, the walls of which were equal in depth to the perpendicular diameter of the alveolus. I have adopted the rule of operating externally in those cases of frontal sinus disease in which the symptoms are profound, and fail to yield to intranasal methods of treatment.

Luc of France reports most excellent results from the removal of the floor of the frontal sinus, and immediate closure of the wound after the operation. I have removed part of the floor in some of my cases, and used nasal drainage tubes; large granulations sprang up from the parts which were cut, and gave me more trouble than when the mucous membrane was left on the bone. I presume I did not remove enough of the nasal process of the superior maxilla, which forms the thick part of the floor. I shall try the method of removing nearly all of this part of the floor in a future case; we must remember, however, that the space between the thin, bony wall next to the brain, and the floor of the sinus, may be twice as great in one case as it is in another.

As the infundibulum walls are also the walls of two or three anterior ethmoidal cells, of course, when the canal is enlarged, it is done at the expense of the cell walls, and it is preferable that this should be done with some smooth or soft substance, for destruction of the mucous membrane of the canal produces granulations which ultimately obstruct the passage of the secretions. In severe cases it is well to remove a part of the anterior ethmoidal cells.

In the extreme polypoid cases the ethmoid bone is rather brittle, and parts can easily be removed. The bone is almost flinty hard in the suppurative cases. After the middle turbinated bone has been removed, I drill or gouge an opening through the floors of the anterior and posterior cells, and then pass the anteroposterior clippers into the cells and cut away as much of the floors as I can. In some cases I use the lateral clippers to remove the thick part of the floors, and a part of the internal lateral walls. I have relieved all cases by this method, and cured some; many of them continue to secrete a certain amount of a glassy, mucopurulent substance, which seems to come from the little cells which are situated in the deeper recesses.

The sphenoidal cells are not so difficult to open as some are inclined to think. In cases in which the septa are moderately straight, and in which the posterior end of the middle tubinated bone has been removed, the oozing pus can easily be detected at the point of the natural opening, high up and near the septum. The probe will often enter after careful use; a small, sharp, firm curette, passed in and then pulled outward will usually tear away the sides of the opening sufficiently for good drainage. I do not consider it safe to curette the upper and external walls of these sinuses. Careful scraping of the anterior wall and the floor often produces decidedly beneficial results. There has been much discussion about the distance from the margin of the nasal vestibule to the sphenoidal cells. If the measurements are taken from the point of exit of the natural canal to the center of the septum in front they will vary from 2¾ inches to 3¼ inches, and about one-fourth of an inch less if the middle of the ala is selected. Of course, the face must be composed, for contraction of the muscles will increase or diminish these measurements about half an inch.

Some good surgeons have made the statement that diseases of the antrum of Highmore should be treated on general surgical principles, as diseases of other cavities are treated. I beg to differ with them for many reasons. For instance, the mastoid cells can be obliterated and refilled with tissue and depressed integument. Who would be guilty of removing the external wall of the antrum maxillare and allowing the integument to adhere to the internal wall? This would effect a complete cure, but produce a hideous deformity. Who has not regretted the removal with the curette of an apparently hopelessly diseased mucous membrane, and the periosteum of this thin-walled cavity, and watched through many months the slowly recovering process by granulation tissue? Who has not watched a membrane, apparently beyond physiologic repair, do better without radical surgical interference than similar ones which had been over-curetted? The improvement in the treatment of antral disease will be made in the direction of effective, but conservative surgery.

When a stubborn case is presented the surgeon must decide whether he will operate through the nose, by penetrating the antrum wall, either through the

inferior or middle meatus; or through the tooth-socket and alveolus, after Cooper's method; or through the canine fossa, Desault's method; or through the inner side of the alveolus, near the junction of the hard palate and alveolus, as recommended by Zeim; or through the malar ridge, which I believe was first strongly advocated, in certain cases, by the writer. Probably there are cases in which each of these operations, respectively, would be the best. The judgment of the operator, which must be based upon experience and a careful consideration of every point, must be relied upon for the proper selection. In those cases in which the evidence points to a tooth as a cause, I would advise removal of the tooth and penetration of the antrum through the socket which contained the diseased root. This is such a simple and harmless procedure that it is well to employ it as an expectant treatment, excepting in the very grave forms of disease. I prefer the operation through the malar ridge and canine fossa in all instances when the symptoms indicate that the tissues are extensively degenerated.

CASE XLVI.—Mrs. D., aged twenty-eight, consulted me during March, 1895. She gave the following history: During March, 1894, she began to suffer from a copious discharge from the posterior nares, and two months later a dull, aching pain began in the right upper jaw, which increased, and extended to the eye. An ulcerated tooth was removed from that side, and the dentist made a diagnosis of empyema of the right antrum. He drilled into the antrum, and found pus which was very offensive. He treated it daily for about two months, with but little relief. The electric light produced a dark umbra under the right eye, and there was a bright spot beneath the left eye. Muco-pus flowed from the hiatus downward and backward over the posterior tip of the inferior turbinated bone. I curetted the antrum as well as I could through the small opening on different occasions, and treated the patient a few months, with but little relief. There seemed to be extensive necrosis and caries of the floor and the anterior and internal walls of the antrum. At the New Amsterdam Eye and Ear Hospital, the patient being under ether, I made a large opening into the antrum, removing the external part of the alveolar process, and extended the opening up into the canine fossa. The walls were rough, carious, necrotic, and covered in places with ugly suppurative granulations. This surface was carefully and deeply curetted, the cavity packed with gauze, and there was decided improvement in the symptoms. The aperture was kept open with a large rubber tube for several months, and recuretted at intervals of about six weeks. Exuberant granulations would spring up, and also circumscribed areas of carious and necrotic bone, preventing cicatrization. The membrane gradually closed around the tube, which I excised under cocain with a Graefe knife, and the diseased area gradually lessened and improved. At present there is a slight amount of mucus, but this is not troublesome, and the symptoms of diseased bone have disappeared. There are still many rather firm granulations which seem to be cicatrizing over the region which was deprived of its mucous membrane and periosteum.

CASE XLVII.—Mrs. H., aged twenty-seven, applied to me for treatment during 1895. She gave a history of nasal discharge, which dated back to her infancy. About three years before I saw her pain commenced in the face and head, which was more severe on the left side. There was a discharge of matter and crusts from the nose, and her headaches had been so severe that morphin was necessary to relieve her. She had also suffered from photophobia. The electric light produced an umbra beneath both eyes. Mucopurulent crusts were lying in the middle meatus, near the antrum of Highmore opening, and there was a general appearance of atrophic rhinitis. During April, 1895, I drilled through the malar ridge (the first molar tooth being absent), making an opening about eight millimeters in diameter, and found that the cavity contained pus, muco-pus, and some granulations. I curetted it very carefully, and inserted a rubber tube, and irrigated the cavity regularly. The incrustations in that region, which indicated atrophic rhinitis, disappeared entirely, the pain ceased, and the patient improved remarkably.

CASE XLVIII.—Dr. S., age forty, applied to me during the spring of 1895. He was suffering from an unpleasant nasal discharge, which was confined to the right side, headaches, and a constant dripping into the throat. He had suffered from this condition for about one year. Examination demonstrated muco-pus in the middle meatus and around the middle tubinated body. There was a slight deflection of the septum, with rather a large exóstosis pressing into the under surface of the inferior turbinated and the parts around the hiatus. I made the diagnosis of ethmoiditis and exostosis. The parts were so pressed together in the middle meatus that it was impossible to arrive at any definite conclusion as to the extent of the disease. I sawed off the exostosis and removed a part of the tubinated. After treating him for several weeks the secretion lessened. At his own suggestion my attention was directed to the antrum, in which region he complained of a peculiar sensation. I passed a tube into the antrum, and on irrigating a quantity of very offensive pus came away with the fluid. These irrigations were kept up for some time, and he improved to a certain degree. He continued, however, to be annoyed by a discharge of muco-pus, but in a much lesser degree than before. I had noticed a defective first molar tooth, and suspected that it was the cause of the trouble. I requested him to have it extracted, which he did, and necrosis was found at the end of the root. The antrum was irrigated through the socket for several weeks, and he improved steadily, and in six months was apparently well.

CASE XLIX.—Miss S., aged twenty-two, applied to me in June, 1895. She gave a history of having had polypi removed from the nose since her fifteenth

year. Upon examination, polypi and pus were observed in the right middle meatus. The electric light showed a dark umbra beneath the right eye, and produced a light spot beneath the left eye. The polypi were removed with the snare and forceps, and pus continued to ooze from the antrum. During the previous March she had had an abscess at the root of the first bicuspid tooth, accompanied by intense pain and neuralgia extending over the entire right side of the face and behind the ear. This yielded only to heavy doses of opiates, and at the end of two weeks it suddenly disappeared. On June 14th, under ether, I performed the canine fossa operation, making an opening large enough to admit my little finger. The cavity was full of pus, granulations, and polypi. The cavity was curetted and packed with iodoform gauze, and redressed on the 16th, 17th, and 19th. After this she had some nausea and pain, with a temperature of 100.6° F., and also attacks of depression, "smothering," and wheezing. All the packing was removing and the cavity was insufflated with aristol. The patient improved rapidly. A soft rubber tube was kept in place for several months, and the discharge gradually ceased. The opening was allowed to close. I examined her on February 4, 1896, and found both antrums bright by transillumination; there was a very slight collection of muco-pus in the right middle meatus, apparently coming from the ethmoid. The patient feels that she is entirely well.

CASE L.—Mrs. C., aged fifty, applied to me on July 11, 1895. Her previous history was that pain had commenced fifteen years before in the left upper jaw, and had continued for ten years; then an abscess discharged into the left nostril from the antrum. The last molar tooth was extracted and found to have an exostosis on the fang. Her physician advised that the antrum be entered through the socket. This was done, and considerable pus came away. It continued to flow for two years, and the cavity was reopened twenty-two times. She never had been free from postnasal catarrh. Five years ago the right antrum began to be painful, and this continued until one year ago, when she consulted Dr. Roe of Rochester. He drilled into the right antrum, through the side of the alveolus, and removed pus, fungous growths, and polypi. She wore a tube five or six weeks, the wound closed, and she gained twenty pounds during the year. She had been suffering from a pain in the right antrum for the past few months, felt nervous, could not sleep, had chills, and muco-pus flowed into the throat constantly. On examination I found the middle turbinated hypertrophied, and a certain amount of suppurative ethmoiditis; pus was oozing from the left meatus, and the left infundibulum. The electric light produced a dark umbra beneath the left eye, the right being normal. She complained somewhat of the right antrum, and several surgeons had insisted upon reopening the cavity under ether. I tried to convince her that the right antrum was well, but in order to do this I made a small opening through the flesh which had grown over the aperture made by Dr. Roe, and irrigated the cavity. The fluid came through clear, without a trace of pus. On November 8, 1895, I opened the left antrum through the malar ridge. The cavity was full of pus and granulation tissue. I curetted it carefully, packed it with iodoform gauze for a few days, and then inserted a rubber tube. The patient improved rapidly. I received a letter from her on February 20, 1896, in which she stated that she thought the antrum was entirely well, but that she was still wearing the tube. She expressed herself as being entirely relieved from the severe suffering which she had endured for nearly seventeen years.

SURGICAL TREATMENT OF EMPYEMA.

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ABOUT twelve or thirteen hundred years ago, Paulus Ægineta, the recognized authority in medicine and surgery, had this to say about the surgical treatment of empyema: "The most effectual remedy which has been discovered for empyema is burning, wherefore the parts are to be burnt by applying the root of the long birth-wort soaked in oil, so as to form eschars, one of which we must make between the juncture of the clavicles, and two small ones a little distance from the chin and remote from the carotids, two of considerable size below the mammæ between the third and fourth ribs, two others between the fifth and sixth backwards, another at the middle of the sternum, and another above the mouth of the stomach, three behind, one at the middle of the back, and two on each side of the spine." Leonidas said: "Others, having passed a knobbed cautery through the interstice between the ribs to the abscess, have carried the burning down to the pus. Some have dared to operate upon them by making a transverse incision or one a little obliquely in the skin between the fifth and sixth ribs, then perforating with a knife the membrane lining the ribs and thus evacuating the pus, but they, and those who burn with iron to a considerable depth, either occasion immediate death, the vital spirit being evacuated with the pus, or occasion incurable fistulæ."

Several hundred years before this writer, Hippocrates referred to and recommended paracentesis for the treatment of empyema. At the present time, if one visits any large metropolitan hospital and inquires if any special operations are to be performed, one is likely to hear in an indifferent tone from the busy house surgeon that there may be also one or two "Estlanders," as though the Estlander operation was either a very minor affair or, at least, a daily occurrence. And so it really is; and when I say that it appears to-day to be the recognized treatment for empyema, at least of the chronic form, I have

about covered the ground selected for this paper, and it only remains to describe the operation and to mention, as a matter of historic interest, the various other forms of treatment and their originators.

The Estlander operation was reported in a Scandinavian medical journal in 1879, and consists essentially in the removal of portions of as many ribs as will tend to approximate the chest walls and the lung pleura at the site of the pus cavity, and thereby obliterate the cavity or encourage gradual filling out of the lungs. The operation is recommended when the disease is of long standing and the pleura very much thickened. The point chosen for the operation is that portion of the thorax beneath the axilla, as this locality is destitute of large muscles. If a fistula exists, it serves as a counter-opening; if none exists, a counter-opening must be made. Ordinarily the author of the operation made transverse incisions between the ribs; by a single incision he has laid bare two ribs and sometimes three. The resection is subperiosteal and, of course, is executed under strict antiseptic precautions. The fragments removed are from three to six centimeters in length.

In looking up the subject, I came across the following report of a case of American thoracic surgery occurring in 1858, which was very much like the Estlander operation, although the former was not done for empyema: A Dr. Cooper reports in 1858 to the San Francisco Medico-Chirurgical Society the case of a young man wounded by a slug of iron, which entered his left side, fracturing the sixth rib and remaining in the chest seventy-four days. The patient at this time was greatly prostrated, pus was being discharged from the opening made by the slug, the left lung had lost its function, and dyspnea was now alarming. A T-shaped incision was made, the soft parts reflected to expose the ribs, and an effort made to find the slug with a probe. Not succeeding, portions of the fifth, sixth, and seventh ribs were removed. In doing this, a discharge occurred of about ten ounces of bloody fluid, followed, upon breaking up some attachments, by another discharge of at least two quarts of pus. The pleura was very much thickened. The patient seemed to be rapidly sinking, and was given brandy freely and, after a time, chloroform. The thoracic cavity was explored for at least three-quarters of an hour with a sound, and the foreign body finally found by passing the instrument between the heart and the descending aorta. The forceps, following the sound as a guide, could not be opened without lifting the apex of the heart considerably out of its natural position. The patient recovered rapidly, and at the expiration of a few months seemed as well as before the operation, although the left breast remained somewhat sunken.

Dr. Daniel Brainerd, in 1857, reported a case of empyema treated by injection of iodin. He used a gum-elastic tube of the size of a No. 9 catheter and washed out the pleural cavity night and morning during several months. The patient recovered. In 1860, Dr. Goodfellow dilated upon the successful result of drainage in empyema. He inserted a rubber tube through the fistulous opening or puncture made by a trocar and pushed the tube through a counter-opening made posteriorly and low down. In 1873, Dr. J. Sheperd Fletcher reported a case of empyema cured by five operations of paracentesis and the use of a drainage tube. In 1877, Dr. J. G. Blake of Boston advocated free and early incision in the treatment of pyothorax as soon as the presence of pus was determined, and the subsequent washing of the cavity with antiseptic solutions as soon as the discharge became offensive. In 1879 the Estlander operation was first described. In 1881, Professor King reported decidedly in favor of free incision and drainage whenever pus was present, claiming recovery in from one to three weeks when a strong solution of chlorid of zinc was used. In 1882, Professor Dieulafoy emphasized the fact that it is impossible to transform a simple into a purulent pleurisy by thoracentesis with clean instruments.

Baccelli, an Italian physician, maintains that the nature of the liquid within the chest can be ascertained by means of the whispered voice. If the liquid is serous the whispered voice is well transmitted through the liquid and is pectoriloquous, but is not well conducted when purulent. Dr. Austin Flint did not place much dependence upon this means of diagnosis, asserting that the nature of the liquid can be ascertained much more rapidly and equally as safely by exploratory puncture. In 1882, Dr. Bruglocher advocated the practice of resection of several ribs in cases of long-standing empyema in adults. In 1884, Dr. Janeway called attention to the danger of general anesthesia in operations for empyema, particularly when there is perforation of the lung. He allows the fluid to run out until the patient feels distressed. Dr. Beverly Robinson advises tapping several times before resorting to radical operation. Dr. A. A. Smith thinks the hypodermic exploration alone sometimes favors absorption.

Dr. J. Fayee Finney reports a case of sudden death in fibrosis of the lung from a somewhat rapidly accumulating pleural effusion, emphasizing the necessity for the removal of these accumulations in cases of phthisis.

In the *Lancet* for January, 1886, Mr. R. J. Godlu says that children recover from the various operations and dispose of the residue of pus more easily than adults. In several cases a single aspiration in

each effected a permanent cure. If aspiration has been employed several times without success, he advocates fully opening the cavity a little below and outside the lower angle of the scapula and excising parts of the eighth and ninth ribs. In doing Estlander's operation he prefers removing the thickened periosteum. In children, an attempt to dispense with drainage may be made much sooner than in adults, in whom the tube should be worn as long as pus is discharged. Patients with phthisis and empyema should not be operated upon unless the latter is causing much inconvenience. The same applies to cases in which the pus is quietly discharged through the bronchi.

Cormack reported forty cases in which there were ten fatal results from Estlander's operation and ten complete cures. The procedure is best carried out after an interval of from six to twelve months has elapsed since the formation of a fistula. A very large cavity, extensive tuberculosis, and communication with a bronchus are contraindications. In 1886, Dr. Kassanali reported twenty-one cases treated by slow, gradual drainage, free drainage with a tube being used only when the chest cavity had been entirely emptied. The tube was removed on the thirty-fourth day, recovery being expected on the forty-fourth day. A rib was not removed. In 1887, Dr. W. H. Strickler described a modification of the Estlander operation. He removed enough of the fifth, sixth, and seventh ribs to allow of exploration of the whole pleural cavity with the entire hand, except the thumb, removed bands likely to hinder expansion of the lung, and removed all fibrinous masses. Five successful cases were reported. In 1889, Dr. William Williams described a treatment by means of a valvular tube, the principle of which consisted in removing atmospheric pressure from the external surface of the lung while the opening in the chest wall still remained, thus enabling the lung to fulfil its function and fill up the side of the chest from the first without waiting for any falling in of the side. He reported three favorable results. In 1890, Dr. Pel presented an excellent analysis of one hundred cases, and in summarizing, said that the radical incision, sometimes combined with resection of the ribs, is by far the most efficient method, and is the only one which assures definite results. In very recent cases, however, the radical operation must not be too quickly undertaken, not only on account of danger of infecting the pleura from without, but on account of a recrudescence of the pleural inflammation. An expectant procedure is adapted to those cases in which there is a small circumscribed empyema, without such symptoms as fever, general weakness, rapid pulse, and disturbed digestion. In 1890, Dr. Voelker reported a death from neglected empyema in which perforation of the esophagus and erosions of ribs took place.

In July, 1891, Dr. Henry Koplik published an article on the "Etiology of Empyema in Children," in which he credited the first aspiration and exploratory puncture of the pleural cavity to Bowditch, the American physiologist. His cases were all treated by resection and drainage, and when, as in two cases, the pus became putrid, he attributed this not to admission of air into the pleural cavity nor to bacterial infection from the lips of the wound, but to retention due to insufficient drainage or want of proper expansion of the lung. Dr. Handford of Nottingham, England, reported a double empyema following an illness of three-weeks' duration in a boy seven and one-half years of age, in which both sides were resected at intervals of ten days by removing a piece three-quarters of an inch in length from one rib on each side. Both tubes were removed at the end of nine weeks. Dr. E. M. Light of Leeds, England, reported three cases of pulsating empyema cured by aspiration and drainage.

In March, 1891, a committee of the Belgian Academy of Medicine reported upon the status of the Estlander operation. The report set forth that while this operation occupies a legitimate place in surgical practice, its use is not absolutely necessary in all cases of protracted and extensive empyema. Verebelaje, January, 1891, held resection of a rib generally to be unnecessary, and only indicated when approximation of the ribs hinders free exit of pus. He is in favor of frequent washings with lukewarm 30-per-cent. boric-acid solution, and reports recoveries in from 70 to 80 per cent. of his cases.

Popon states that the literature of this subject shows that prior to 1877 only thirty-six cures after puncture of the pleura had been reported, and of this number there were only seventeen recorded cases of permanent cure. From 1877 to 1883 there is a record of twelve additional cures. During the same period there is a record of 151 radical operations, with 120 cures. From 1883 to 1892, 70 cases were reported, with 9 deaths. During the same period only two successful punctures were reported, hence the radical operation in children is to be preferred.

Dr. Edward Martin reports eight cases, and advises simple puncture in recent cases as the first operative intervention. If this is not sufficient, incision in the fifth intercostal space should be performed. Despite the opinion of Schede and Ziemssen, resection should be reserved, in the author's opinion, for exceptional cases. In August, 1892, Drs. E. B. Hastings and Harford N. Edwards presented a report of the then condition of twenty-four children upon whom the

operation of resection of the ribs for cure of empyema had been performed from one to seven years previously. Careful examination revealed a completeness of recovery in the majority of cases which was surprising. Dr. Rust reports thirty-three cases treated by aspiration and drainage. In eleven clear cases without complications, ten patients recovered, the average duration of treatment being 274 days. The result in all cases, regardless of etiology and complication, is much less favorable, the figures being: cured, 52 per cent.; improved, 18 per cent.; died, 30 per cent.

In June, 1894, G. A. Sutherland reported four cases of double empyema treated by double resection, irrigation, and drainage. He attributed the rapid recovery to his having employed temporary drainage—that is, only seven days, instead, as formerly, seven weeks. The most expanded side should be operated on before the other, as simultaneous drainage has caused alarming collapse. An important part of the after-treatment is forced respiratory movements and chest-expanding exercises. In 1895, Edmund Cantley of London published his deductions founded upon the records of eighty-six cases of patients under twelve years of age. He does not believe the chances of perfect cure are better under treatment by resection, as more of the patients were discharged with a sinus than in the cases treated by incision. Early contraction of the side follows resection more frequently than incision. He states the indications for resection as follows: (1) When the closeness of the ribs prevents drainage; (2) when drainage after the simpler operation is imperfect, as shown by high temperature and offensive discharge; (3) when the lung has re-expanded and the chest walls have contracted, and yet the sinus does not close. In double empyema he thinks the best treatment is simple incision and drainage at intervals of a few days between the two operations. He first aspirates both sides, relieving the heart from pressure, next day operates on one side, preferably the left, and a few days latter on the other. Local anesthesia should be used when the effusion is general on one side and localized on the other, the full side should be operated on first. In double localized effusion, simultaneous drainage may be adopted, but it is wise to wait a few days between the two operations. Dr. G. C. Cumston reports six cases of cure by means of the siphon of Revilloid. This siphon consists of a tube of black rubber three feet long, inserted into the pleural cavity. Two feet from the proximal end is placed a bulb, and the distal end is placed in an antiseptic solution. The proximal end is held in place by plaster. There is no resection of the ribs.

OBSTRUCTION OF THE BOWELS.[1]

BY A. C. TAYLOR. M.D.,
OF DULUTH, MINN.

ON the afternoon of December 25, 1896, I was called to the village of Two Harbors to see a young man, who presented the following history: He was sixteen years of age, strong and well-developed, and never had had any illnesses other than those incidental to childhood. On December 20th he had slight colicky pains, which induced him to take a laxative, which gave him relief. No amount of questioning elicited a history of pain previous or subsequent to that time until the following Thursday (the 24th), when he had more or less pain all day, but not of a character so severe as to cause him to make any complaint until evening, when it became so marked that the family physician, Dr. J. D. Budd, was sent for. Dr. Budd at once attempted by the use of saline cathartics and enemata to move the bowels, but without success. Vomiting commenced about 10 P.M and continued until 4 A.M., when it subsided until about four in the afternoon. Cathartics were not administered after vomiting commenced, but injections of water, glycerin, olive oil, etc., were freely tried, until the rectum became so irritable that this method of treatment had to be abandoned. During all of this time the patient had not received opiates, so that when I arrived, at about 4.45 P.M., on Friday, the 25th, the symptoms were in no way obscured. I found him with a pulse of 100, temperature 103° F., respirations 20, pain remitting, countenance fairly good, and constipation complete. At about 4 P.M. he had vomited nearly a quart of yellowish material, evidently from the intestines, but free from stercoraceous odor. He had not taken anything solid or liquid into the stomach since early morning. He had frequent eructations somewhat resembling singultus. Tympanites was slight, but pain and tenderness were extreme, being greatest in the left iliac and lower central part of abdomen, with a limited area of dulness midway between the umbilicus and pubes. Peristalsis, as determined by ausculation, ceased at this point.

I diagnosticated an acute obstruction, with a local point of inflammation, due to an unknown cause, and decided that an operation offered the only hope of saving the patient's life. The attending physician concurring in this view, as soon as preparations could be made, which required a few hours' time, the abdomen was opened in the median line, and the exploring finger soon came in contact with a mass of recent adhesions involving the ileum. The abdominal incision was then enlarged and the whole mass carefully lifted out on warm towels. The adhesions between the coils of intestine were broken up, when the cause of the trouble was found apparently to be a volvulus, but which upon further investigation proved to be a diverticulum. This loop or sac had become strangulated, probably from stasis of fecal matter, and gangrene and perforation had occurred, the opening being as large as the end of the little

[1] Read before the St. Louis County Medical Society, March 1, 1897.

finger. The loop was removed, with sufficient of the gut to allow of healthy tissue being obtained on each side, probably six or eight inches in all, and the ends of the divided gut were brought together and united with the Murphy button.

On the following day the boy's temperature was nearly normal and his pulse about 86. His recovery was uneventful, except that following the separation of the button, which probably occurred on the seventh or eighth day, there was considerable griping pain, with constipation for two or three days, while the button was passing through the last few inches of the ileum. The button was passed on the eighteenth day.

Determination of the method of treatment in a case of ileus must depend upon an accurate diagnosis; and this is the point which I desire to bring out in this discussion. In making a diagnosis we must depend, *first*, upon the history; *second*, upon the symptoms, and, *third*, upon physical exploration. In order to fully understand the lessons which these teach, and to draw proper inferences from them, the causes which may produce obstruction must be understood.

For convenience, I shall consider the causes of ileus under nervous and mechanic heads. The nervous causes I divide into (*a*) direct, (*b*) reflex, or, if it is preferred, central and peripheral. Among the direct or central nervous causes we find spinal paralysis from injury or disease of the spinal cord, injury or disease of the splanchnic nerves, and narcotic and ptomain poisons, such as opium and tyrotoxicon, and, I believe also, the salts of lead. To the reflex or peripheral causes may be ascribed the passage of renal or biliary calculi, a compressed ovary, peritonitis from all causes, and perhaps also simple mucous ulcer. Among the mechanic causes we have simple obstruction from foreign bodies, such as impacted feces, enteroliths, biliary calculi, etc, and constriction of the lumen of the gut or of the blood-vessels supplying the part, or both.

Of all the various symptoms which may and do arise in these cases, there are but three which are common to all, *viz.:* persistent pain, persistent constipation, and persistent vomiting. (In intussusception in children it is to be remembered that mucous and bloody diarrhea is frequently present instead of constipation.)

Let us now observe some of the points characteristic of each of the above divisions, if any can be found, by which we may determine to which class a case belongs. Ileus, from central or direct nervous causes, will present a history of injury or disease of the nerves, retention of urine, and altered reflexes. In opium poisoning there is slow respiration, contraction of the pupils, and somnolence. In lead poisoning the occupation of the patient, the blue line on the gums, and retraction of the abdomen, will serve as a guide to a correct diagnosis. Ptomain poisoning is not so easy to distinguish, but usually there will be convulsions or muscular tremor, paralysis, and dilation of the pupils.

Taking up the reflex or peripheral division, we find that in biliary calculi assistance in arriving at a correct diagnosis is rendered by the history of previous attacks, by the character and seat of the pain, and by the presence of jaundice and a slow pulse. In renal calculi there will probably be a history of previous attacks, which, together with the character and location of the pain, which is peculiar and which probably precedes the symptoms of intestinal obstruction, makes the diagnosis tolerably certain. In compression of an ovary, a vaginal examination will reveal a displaced organ which is tender to touch, or which is pressed upon by a tumor or adhesion. The temperature and pulse are not much altered unless the condition is accompanied by local peritonitis.

In ileus due to mechanic causes, fecal impaction is easy to diagnosticate, through the presence of the soft, nodular, doughy mass, which nearly always is located in some portion of the colon or rectum. The slow development and flat percussion note of the mass are also important factors. The presence of other foreign bodies, such as impacted biliary calculi, and enteroliths, is not so easily recognized, and my belief is that a diagnosis is impossible except by ocular or direct digital examination.

We may, then, in a case of ileus, easily recognize any of the above conditions when they are present, or eliminate them if not present, with the exception of the two last-named. We will then have left the cases due to constriction either of the lumen of the gut or of the blood-vessels, or both. These cases may be divided into the chronic and acute variety. In the chronic cases may be found tumors and abnormal growths involving the intestinal tract or mesenteric vessels, contraction of cicatrices, adhesive bands, etc. In the acute class will be found wounds of the gut or vessels, intussusception, strangulation, as in hernia, volvulus, or slipping of a portion of the intestine through loops of adventitious growth.

Intussusception may be inferred by the age of the patient, acuteness of the attack, severity of pain with periods of intermission, and occurrence of mucous and bloody stools. In one-half of the cases a tumor can be felt in the left inguinal region. External strangulation, as in hernia, is, of course, easily diagnosed. Internal strangulation, by volvulus or otherwise, usually can be made out by the acuteness of the attack, severity of the pain, and occurrence of shock and tampanites, peristalsis ceasing at the point

of strangulation. Whether there be tumefaction at the point of constriction depends largely upon the manner in which the compression is made. Experiment upon animals has shown that constriction of the mesenteric vessels, if the parallel artery is intact, causes an edematous condition of the intestinal walls, with transudation of fluid into its lumen; whereas, if the parallel artery also is constricted, death of that portion of the gut is immediate, and no distention, but rather absorption, takes place. (Murphy.)

From a surgical standpoint, cases of ileus resolve themselves into two classes—operative and non-operative. The question always before us, then, is, will the patient recover without surgical interference? Unfortunately, we cannot always decide this point. Cases which I have classified as of nervous origin, whether due to central or peripheral causes, including peritonitis, must be classed as inoperable.[1] In the second division, or mechanical cases, with the exception of instances of fecal impaction, the indications change, and surgical interference is almost the only course offering hope of success and should not be delayed a moment after the diagnosis has been established.

Of the treatment by distension with water, or inflation with gas, I can only speak in order to condemn. Take the case I have just cited, in which the perforation was sealed to the omentum and adjacent coils by plastic lymph only thirty-six hours old, as an illustration. Even a moderate amount of distension, by straightening out the coils, would have broken up these adhesions, opened the perforated gut, and caused an outpouring of fecal matter into the free peritoneal cavity, and death of the patient would have been inevitable, or, at least, highly probable. It appears to me that those who recommend distension with fluid equal to a pressure of four atmospheres can have had but little experience with the treatment. Dr. E. Martin of Philadelphia, while recommending this procedure, admits that it should not be made use of when the obstruction has existed for more than three days, owing to the possibility of gangrene or perforation having occurred, and advises that the surgeon be prepared to operate immediately in case rupture occurs. In the case cited above, perforation had certainly occurred within forty hours, and probably within a much shorter time.

One word regarding the so-called exploratory incision as a means of diagnosis. While in all cases in which an operation is performed the first incision should be small, only large enough to allow the operator to decide upon the nature of the disease, and the steps which are necessary to complete the operation, I believe that a small exploratory opening does not accomplish much in the way of diagnosis in intestinal obstruction, nor do I believe that it should be lightly undertaken. For instance, suppose an exploratory incision is made in a case of obstruction from any of the nervous causes mentioned in my classification. Teachers tell us if we find nothing, to sew up the wound and no harm will have been done; but in practice one finds a uniformly distended gut, and I have seen the whole ileum pulled out of the wound before it was decided that there was no cause for operation.

[1] I do not wish to be understood as saying that peritonitis or injuries or disease of the nervous system should never be treated surgically, but that one should not operate upon the intestinal tract to relieve a condition which is purely symptomatic.

CLINICAL MEMORANDUM.

TUMOR (GLIOMA) OF THE LEFT TEMPORAL LOBE OF THE BRAIN; ATTEMPTED REMOVAL.

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THE diagnosis of brain tumor is very easily made, but the exact localization of the tumor is not always so readily determined. Yet this local diagnosis is of the greatest importance, as upon it depends the decision of the possibility of surgical treatment. It is a fortunate fact that the parts of the brain in which tumors can be most definitely located are the parts which are most easily accessible to the surgeon. But the signs and symptoms which make a local diagnosis possible are occasionally misleading. This fact should be regarded in every case, and hence it is well that failures and mistakes should be recorded as well as successes, for one may learn as much from the former as from the latter.

In a study of a collection of 300 tumors of the brain among children, made by one of the writers during 1889,[1] it was found that fifty-six of these were accessible to the surgeon. Sixteen could have been accurately located, and successfully removed. Among the remainder, there were several in which the symptoms pointed to an accessible location on the cortex, but the autopsy proved the site of the tumor to be at a considerable distance from the supposed position, either deep beneath the cortex, or at some distance from it, the symptoms having been produced by pressure transmitted from one part to another. This was also true of the case here reported. The symptoms in this case which indicated the location of the tumor were a slowly progressing motor aphasia, to which was added,

[1] "Tumors of the Brain in Children," by M. Allen Starr, MEDICAL NEWS, January 12, 1889.

after three months, a rather rapidly increasing right hemiplegia. The localization was, therefore, made of a tumor in the left third frontal convolution growing backward and inward so as to compress the motor tract in its passage toward the internal capsule. On this diagnosis an operation was undertaken, but it failed to reveal any tumor in the part exposed. At the autopsy, ten days after the operation, the tumor, an infiltrating vascular glioma, was found deep within the apex of the temporal lobe. It must, from its location, have produced pressure inward and upward, as any pressure downward or outward was prevented by the walls of the skull. Such pressure naturally affected the function of the parts compressed, and as there were the third frontal convolution and the Island of Reil with the motor tracts beneath it in the capsule, the symptoms were necessarily misleading. They were indirect rather than direct local symptoms—to use the very apt terms first selected by Nothnagel.[1]

It seems in many cases impossible to distinguish clinically between these varieties of local symptoms. Hence, even now, with an experience of 220 cases of brain tumors in which operations have been undertaken, reported in medical journals since 1885, it must be affirmed that in every case an operation for the removal of a brain tumor is an exploratory operation.

The case in question was as follows:

F., aged fifty-five, had been quite well until August, 1896, when she suffered severely from the intense heat, and this, combined with a prolonged mental distress consequent upon the illness and death of her husband, produced a condition of general nervousness. From this she appeared to recover gradually during the month of September, but in October she began to suffer from considerable pain in the head located quite distinctly in the frontal and temporal regions of the left side. This headache was of a continuous, dull, throbbing character, and remained during her illness. It was increased by any physical or mental exertion, by any sudden change of position, especially in stooping, and by the use of nitroglycerin, which was tried as a remedy. During August and September it was noticed by those about her that she would occasionally misuse a name or word, putting it in the place of the word she intended to say, especially if of like sound, but upon being corrected, or upon being asked if she meant to say the word which she had used, she would immediately correct the mistake. This was not very noticeable at the time, but was remembered in view of the subsequent history.

During October and November this defect of speech increased steadily. She noticed a progressive loss of power in remembering the names of old acquaintances and of friends whom she was meeting, and her misuse of words became more and more apparent to those with whom she conversed. In spite of this defect, she appeared to be quite active; she went out and saw many friends, and was vigorous, walking considerable distances, had a good appetite, good sleep, digestion was normal, kidneys were normal, and her headache though constant was never very intense. During the first two weeks of November her headache become more severe and a marked nervous and mental excitability was evident, with considerable depression of spirits and some embarrassment and anxiety at her supposed failure in mental vigor. She became painfully conscious of her defect in speech and of her loss of memory of words, and the aphasia now increased to the point where all long sentences were avoided and the misuse of words was more constant. At the same time she was conscious of her defects, attempted to correct her mistakes and usually succeeded in doing so. It was now noticed that similar mistakes were made in her writing, that she omitted words, or occasionally repeated words or wrote words which had no relation to the sense. In addition to this progressive aphasia and agraphia there developed during the last two weeks of November considerable physical weakness. She become easily tired upon walking, or upon any exertion, but this weakness did not appear to be limited to one side of the body.

On December 2d, she had a sudden attack, without loss of consciousness, in which she lost the power of speech entirely, and seemed to be very weak, though her radial pulse remained at about 80, her pupils normal and equal and her intelligence active, but there was a marked weakness of the right hand and leg, and she appeared to be very much prostrated. She remained in bed for two days at this time, and when she got up it was noticed that there was slight paralysis on the right side of the body, so that she staggered in walking, dragged her right foot, tended to fall toward the right side and was awkward in the use of her right hand. Five days after this attack, however, she was able to make the journey from Ohio to New York, though she remained in bed all the way, and it was noticed that on her arrival she was weaker on the right side of the body than when she started.

Examination on December 9, 1896, at St. Vincent's Hospital: A large, fleshy, well-nourished woman, apparently in a state of good intelligence, active mentally, observant, and understanding perfectly everything that was said to her. The pupils were equal, and there was no ocular paralysis or apparent disturbance of vision; power of smell normal; optic neuritis was found on both sides, more marked upon the left. Slight, but well-marked, right hemiplegia involving the face, tongue, arm, and leg, without any sensory disturbances, was present. The right side of the face was slightly flatter than the left, and the tongue deviated slightly to the right. The chief loss of power was in the right arm, which was somewhat awkward, had only two-thirds of the power of the left, and was slightly ataxic in its movements. The right leg was dragged somewhat in walking, and was distinctly weaker than the left, so that she staggered toward the right side and was uncertain in her gait. The knee-jerk was increased on the right side; ankle clonus present. Control of the bladder and rectum was perfect.

The condition of aphasia was very marked. She appeared to understand what was said to her, but attempts at talking were confined to single words, and a long connecting sentence was impossible. Her words were occasionally unintelligible and she realized the mistakes that she made. It was as impossible for her to read as it was

[1] "Topische Diagnostik der Hornkrankheiten," Berlin, 1879.

for her to talk, and she could not repeat words after another. Her power of comprehension of things seen was good. She was unable to write, not so much on account of the loss of power in the arm, which was not sufficient to interfere with writing, but apparently because of a true agraphia. She did not seem to be able to recollect how to make the letter, or how to write figures, though when they were written for her she could read them and add them correctly. There was no apraxia. There was no anesthesia of the body and no hemianopsia. Constant pain was felt over the left temporal region, which was sufficient to keep her awake at night, and was the chief cause of her distress. It was quieted somewhat by the use of phenacetin but was markedly increased by the use of nitroglycerin. There was some tenderness on percussion over the left temporal and frontal regions, and a marked difference in the sound of the percussion note upon the two sides of the forehead, it being flat on the side of the tumor.

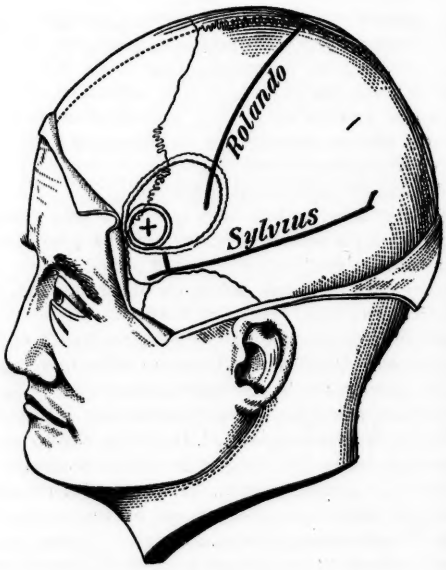
Diagnosis.—In view of the gradual progressive onset of the disease, headache, optic neuritis, tenderness along the head upon the left side and steadily advancing motor aphasia, followed by right hemiplegia, the diagnosis was reached of a tumor of the brain, and its location was thought to be in the third frontal convolution upon the left side. Although there were no evidences whatever of syphilis, it was thought best to prescribe inunctions of mercury and rapidly increasing doses of iodid of potash. This treatment was at once begun and pushed vigorously for two weeks. During this time her symptoms increased rapidly and by the 20th of December the right hemiplegia was almost complete, the aphasia was total, she could no longer read, and it was sometimes uncertain whether she fully understood what was said to her. Her speech was reduced to the words "yes" or "no," and these were not always properly used. Her headache became more and more intense, the optic neuritis increased rapidly, she was extremely restless at night, and she frequently vomited her food. It being evident, therefore, that the treatment was producing no affect, it was resolved to operate with the view of removing the tumor. The propriety of operation was concurred in by Drs. J. O'Dwyer and Callan, and by Dr. Robert F. Weir, who was called in as the consulting surgeon.

Operation, December 24, 1896, by Dr. Weir. The scalp previously having been shaved and duly disinfected, under ether anesthesia the lines of the fissures, Rolando and Sylvius, were not only marked out on the skin, but through two punctures made through the scalp to the skull over each fissure the pointed end of a disinfected pencil was rubbed on the bone beneath. This was also done over the third frontal convolution, the supposed locality of the tumor. The usual large curved flap, some three inches wide at its base, was then made and turned downward.

To control the usually free and sometimes dangerous hemorrhage from this incision, instead of clamps or a rubber band passed around the head with the temporal regions duly padded, the operator used here satisfactorily, as on several previous occasions, short hat pins, which were passed in and out across the base of the flap itself, while around the head and projecting point of each pin was stretched one of the ordinary rubber bands of small size used for bundles, etc. Two of these pins sufficed to check the bleeding, and a similar use of these pins and rubbers along the other part of the divided scalp controlled the oozing and spurting of blood. Of course the bleeding from the bone itself had to be met, when it required attention, by the ordinary methods in use.

An inch trephine rapidly cut through a rather thin skull, and this area was enlarged with ease and promptness by means of Hoffman's rongeur forceps, until an opening two by two inches was made. This method of opening the skull was chosen as no facilities for using the electric saw with Weir's dura protector[1] were present; but in either case, the operator's preference since 1887 has been, in all cases in which the question of a tumor arises, to leave a permanent opening in the skull to guard against either a recurrence of pressure from renewed or from another growth, or to give relief in case a growth is not found, or cannot be removed. The opening in the skull is shown in Fig. 1.

FIG. 1.



The cross represents the supposed location of the tumor, the small circle the trephine opening, and the large circle the openia made by the rongeur.

The dura was now divided about an eighth of an inch from the bone, and reflected downward in an oval flap. This procedure, the ordinary one, is not so good for a resuture as a crucial incision, but it affords a freer scope for examination of the cerebral surface. In this particular instance, in which the growth was not found, and, therefore, the pressure not relieved, considerable difficulty was experienced in closing the gap in the dura, and this was

[1] "Trans. Am. Surg. Assn.," 1897.

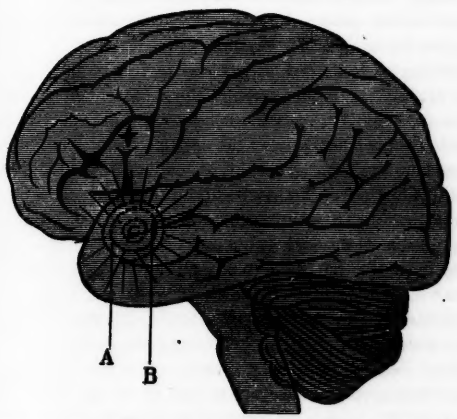
accomplished by inserting some gold foil[1] beneath the still gaping edges of the dura mater.

The exploration of the brain by sight and moderate palpation revealed no growth or change of circulation or nutrition. Deeper palpation, admitting the finger-end underneath the edge of the divided skull for nearly an inch in varying directions, detected no abnormality, nor did a needle meet with any resistance.

With regard to the procedure of exploring the brain for deep-lying tumors, needles or other instruments are of but little use. The finger is the best tool, and experience, as well as the tests of Adamciewicz and others, has shown that the brain will bear steady firm pressure to a great degree, if not too long continued. I have also had aid in obscure cases by opening up a convolution and making pressure at its bottom. In one instance I thus recognized, at a depth of 1½ inches in the white substance, a tumor not otherwise to be felt.

Here, as the exploration thus carried out failed to detect the neoplasm, the operation was arrested, the dura closed in the manner already detailed, and a thin layer of

FIG. 2.



The cross shows the supposed position of the tumor, the dotted lines its real location beneath the cortex, and the radiating lines the direction of pressure exerted by the growth.
A, plane of section shown in Fig. 3.
B, plane of section shown in Fig. 4.

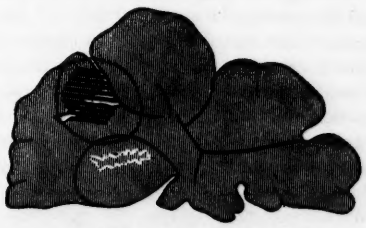
iodoform gauze laid over the lower half of the replaced dura, and laid out through the postero-inferior edge of the wound. The scalp flap was replaced and fastened with interrupted sutures of fine black silk, and the usual aseptic dressings applied. No improvement followed the operation.

The patient's temperature, which was 102° F. after coming out from under the influence of the ether, came down gradually to 100° F., and did not rise again. The wound healed perfectly without suppuration, the sutures being removed on the fourth day, and her pulse was quite regular and natural, but she gradually sank into a comatose condition, the hemiplegia becoming absolute and the aphasia total. During the last two days she was unable to swallow, and was comatose, and died quietly on the eighth day after the operation.

[1] Gutta-percha tissue will answer even better than gold foil. The latter recently has been found to be penetrable by granulation-tissue, and, therefore, does not so surely prevent adhesions.

Autopsy.—A complete examination of the brain was not permitted, but an exploration through the opening in the skull was allowed. It was found that the scalp had healed perfectly, and there was no evidence whatever of pus in the dura or the brain. The process of healing with adhesions of plastic lymph had everywhere begun. On exposing the brain by laying back the dura, no special bulging was observed; its convexity was perfectly smooth. Excision of the frontal and parietal region beneath the opening failed to reveal any evidence of disease in the brain, but palpation downward revealed a considerably harder consistency of the anterior portion of the temporal lobe. This became more evident as the finger was passed into the fissure of Sylvius, and pressure downward within this fissure was made. Removal of the anterior part of the temporal lobe, including the Island of Reil, revealed the existence of a large infiltrating glioma somewhat harder

FIG. 3.



Section through the left hemisphere, showing the tumor. The dotted line shows the area of compression.

FIG. 4.

Section through the left hemisphere, showing the tumor. The dotted line shows the area of compression.

in consistency than the brain about it. This occupied the white matter of the apex and median portion of the temporal lobe infringing upon the Island of Reil and exerting pressure inward, forward, and upward. It lay about one inch beneath the cortex of the first temporal convolution and measured about one and a half inches in all directions. Microscopic examination by Dr. B. G. Briggs showed that the tumor was a glioma of considerable vascularity. In parts it was quite cellular, but not sufficiently so to be classed with the gliosarcomata. Within the tumor there were large areas of necrobiosis with small cysts and hemorrhages. The diagram shows the situation of the tumor as outlined upon the cortex and the sections show its situation within the brain.

AN ADDRESS.

THE INFLUENCE OF THE NERVOUS SYSTEM IN SKIN DISEASES.[1]

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DERMATOLOGY is a subject of vast scope, and to be a successful cutaneous specialist the student must have considerable knowledge of general medicine. The study of this specialty will yield more profit practically, and more satisfaction scientifically, if the relations between this special class of diseases and the physiologic and pathologic conditions of other organs are thoroughly investigated and understood. The vascular, nervous, and lymphatic systems must all be studied and deductions drawn from them, for each organ of the body has more or less to do with the cause, progress, and prognosis of nearly all diseases affecting the cutaneous system. The earlier writers on dermatology taught that about all the treatment necessary was that which could be applied locally; in fact, many diseases were not treated at all, for their presence was considered beneficial to the general health. For instance, it was thought harmful to cure infantile seborrhea, or a chronic eczema affecting the legs of old people. As soon as skin diseases rose to the dignity of a special study there was a change, and thanks to the improved methods of examination, the light of advanced pathology and bacteriology, each cutaneous affection has been brought out of the obscurity which so long enshrouded it, and we are now able to understand these diseases with scientific certainty. The more we study the skin the more we are taught to recognize the great influence the nervous system has on the outbreak and course of many of its affections.

Before we consider some of the more prominent diseases traceable to disordered nerves let us glance at the physiology and anatomy of the skin. We are told that it is the external enveloping membrane of the body, giving support to the muscles and vessels beneath. It also serves as the regulator of temperature, and furthermore, protects against the introduction of infectious germs. The skin is divided into a number of layers; the one which especially interests us is that which is known as the papillary layer, situated on the free surface of the coreum, consisting of numerous small, highly sensitive eminences, the papillæ. In some parts of the skin these eminences are very numerous, as for instance, in the palm of the hands and soles of the feet, while in others they are comparatively rare. Each papilla contains a papillary blood-vessel and a terminal nerve-fiber. Thus, the skin is a great sensitive envelope filled with innumerable nerve endings, which have their origin in the cerebral, spinal, and sympathetic centers. It is readily seen that in any irritation or disturbance of these ganglia the skin is made to participate, and if this irritation is continued for any length of time the skin becomes more and more inflamed, and finally becomes thoroughly diseased.

Perhaps the most frequent neurocutaneous disturbance which the general practitioner is called upon to treat is simple acute facial erythema of the menopause, the so-called hot flashes. This is undoubtedly caused by some disturbance in the sympathetic system producing a sudden filling of the cutaneous capillaries; the inhibitory nerves to the papillæ being taken off their guard this phenomenon results. If this erythema continues for any length of time we next observe that the skin has grown thicker, and that small red lines have appeared about the nose and over the malar eminences. These are enlarged capillaries. Finally, small papules and pustules are seen and the condition is known as acne rosacea. This disease is not confined exclusively to females, for frequently we find it accompanying an enlarged prostate, which keeps up an irritation of the genital tract. The counterpart of this climacteric disease is simple acne, which occurs about the time of puberty. At this period of life the adolescent is passing through a wonderful change. Glands which have before been quiescent are stimulated into activity, while the nervous system is constantly in a condition of excitement. In boys there is more or less genital hypersensitiveness attendant upon the development of the sexual organs. In girls, at the beginning of menstrual life, there are frequently a number of peculiar reflex nervous phenomena, which have more or less effect on the cutaneous circulation, and this is often sufficient to cause the appearance of acne. We constantly hear the gynecologist lament the fact that so many young women have some form of menstrual irregularity, such as dysmenorrhea, amenorrhea, etc., each being capable of producing enough nervous reflex to cause acne. In treating these diseases these facts should be borne in mind, although the reflex cause, of course, is only one of many in the production of the eruption. Insure a thorough emptying of the rectum and then see to it that constipation does not recur. Try to relieve genital irritation in the male by the use of drugs, by passage of the cold sound, as recommended by Sherwell, or by urethral injections of cold water. If menstruation is attended by pain and much discomfort, hot vaginal douches will relieve the pelvic hyperemia and thus ameliorate the acne. Be constantly on the lookout for the neurotic causes, for if they are not detected and properly treated the patient will derive but little benefit from any external application you might prescribe.

Another neurotic skin disease which will be your fortune or misfortune to treat is urticaria (hives or nettlerash). No age or sex is exempt, although it is more common in females and children. The causes are so numerous that for convenience of study they should be classified, first, into direct or local irritation of the skin, and second, into indirect or reflected irritation. Under the first head is placed bites of insects, as fleas, mosquitoes, etc. The bite of a single insect will often produce enough irritation to cause an outbreak of urticarial wheals in regions of the skin far remote from the original bite. The irritation is conveyed along the sensory nerves, causing a reflex urticaria. Indirect irritation acts chiefly through the alimen-

[1] An address delivered by request before the students of the Medical Department of Syracuse University.

tary canal, usually the stomach or upper intestinal tract, the irritation being applied to the gustatory nerves and reflected on the skin. Possibly you have seen patients who always have an outbreak of urticaria after eating certain kinds of food, such as shell-fish or strawberries. These, with many other articles of diet, are capable of producing in some people severe attacks of this disease. Medicines, such as quinin, copaiba, morphin, etc., also have a similar power, This reflected skin affection is one of the nervous phenomena observed in children troubled with intestinal worms.

Disorders of the pelvic organs are frequently accompanied by urticaria, some women having attacks just before the menstrual period, or during pregnancy or lactation. I am attending a patient at present who has an urticaria arising from disordered genital organs. She is about forty-seven years of age, married, has never had any children, and for many years has been afflicted with various reflex and direct nervous troubles, all of which have been referred to the sexual tract. This attack of urticaria has existed for eight months, and began at the cessation of menstrual life. Urticaria is also seen in diseases of the nervous system, as locomotor ataxia. Some years ago Charcot reported a case of locomotor ataxia accompanied by a severe outbreak of giant urticaria. I remember a similar case, a man ill with posterior spinal sclerosis having all through his illness more or less urticaria, the rash being greatly aggravated when the spinal pain was severe. The mental attitude of a patient predisposes to this disease, depression and worry being sufficient to provoke an outbreak. Enough has been said to show that urticaria is primarily a vasomotor disturbance, direct or reflex, central, or peripheral. The course of events is probably this: a spasmodic contraction is followed by a paralytic dilatation of the vessels and stasis of the capillary circulation; exudation ensues, producing acute edema which lifts up the epiderm into a wheal. The treatment is apparent: give anything that will remove the reflex or direct irritation.

The influence of a deranged nervous system is seen in that common and protean disease, eczema. The eczematous patient is never in good health; he complains of being out of sorts, and there is a condition of nerve exhaustion, be it from worry or overwork, either of mind or body. I am inclined to think that the great struggle for wealth is often a cause of the eczema seen in business men of our large cities. Irritation of the alimentary canal or genital tract acting reflexly on the nerve-centers, and thus producing capillary dilation, will provoke an attack of eczema. Particularly is this true in children, for it is no uncommon thing to see an obstinate case of infantile eczema disappear almost like magic after the child's diet has been changed. The same result is observed after the loosening of a tight and adherent prepuce. Eczema has been known to occur as a sequel to neuralgia of certain nerves, and it is often associated with asthma. Frequently during the apparently successful treatment of eczema a sudden relapse occurs which often does more mischief in one hour than can be corrected by treatment in weeks. This certainly appears to be due to faulty innervation.

The fact that direct disturbance or disease of the nerves may produce disease of the skin is proven by the occurrence of zoster. Many theories have been advanced regarding its etiology. No matter how widely varied these theories may be they all point to some effect on the nerve ganglia or the nerve itself. Kaposi of Vienna is the strongest advocate of the theory of a nerve toxemia. I personally consider malaria to be an active cause, at least in those parts of the world where paludism is prevalent. The correctness of this opinion may be proved by an examination of the blood, and finding the malarial germs. I have reported a number of cases of zoster as occurring in Brooklyn in which the presence of these germs was demonstrated. The malarial plasmodium acts in a similar manner to any other toxic substance; it clogs the blood-vessels and impoverishes the blood and finally produces a form of neuritis. Arsenic has been recognized as being capable of producing zoster, on account of its action on the peripheral nerve ends. Poisoning from coal gas and carbonic oxid will also produce the same results. That zoster is a neurosis has been proved anatomically by Bærensprung, Charcot, and many others. The lesions observed are an interstitial inflammation of the posterior ganglion and a neuritis of the trunks of the nerves arising from it to supply the diseased cutaneous area. Chronic inflammations of the posterior columns of the cord have produced zoster while the ganglia and nerves were unaffected. In addition to inflammations producing neuritis, attacks of zoster often follow injuries about the exit of the nerves from their bony canal; as, for instance, pressure from blood clots, embolism, the presence of tumors and leprous deposits.

Of all the ills that flesh is heir to there is probably no sensation so excruciating as itching when it becomes a disease. The dermatologist is often called upon to treat an affection known as pruritus. This is a functional defect in innervation, in which itching is the only direct symptom. Prurigo, an entirely different disease, is often confused with pruritus, but the former is a chronic inflammatory disease while the latter has no inflammatory objective symptoms. Pruritus is either general or local, and for the sake of convenience it is classified according to its location. A proper understanding of its etiology is very important, for upon this depends its successful treatment. In a certain way pruritus bears a relationship to urticaria, for the same organic disturbances will produce both. Organic diseases of the uterus and irregularities of the menstrual function will often cause it. Occasionally it is associated with hysteria, the presence of vesical calculi, vegetations of the urethra, hemorrhoids or intestinal worms. Ingestion of certain medicines, as opium, will sometimes cause it. In old age, when degenerative changes are taking place, pruritus is very frequently met with. It will be seen that the causes of the affection are very similar to those of urticaria, but the effect upon the skin is altogether different. It is primarily a functional disease, one purely of sensation, and should be viewed as being due to a reflex or direct irritation of any part of the nervous system from center to periphery, it not being accompanied by any appreciable lesion of the skin nerves.

Thus far only those diseases which are common and of

frequent occurrence have been considered. Patients suffering from acne, acne rosacea, eczema, urticaria, pruritus, and herpes zoster will consult you no matter where your practice may be, for no country or station of life is immune. The better you are prepared regarding diagnosis and treatment the greater will be your influence among your *clientele*. With your permission I will pass to those neurocutaneous affections which are more or less rare, the first occurring to me being pemphigus. This disease seems to be particularly fascinating to the youthful doctor, for I have seen hospital internes find more cases of pemphigus than almost any other skin disease, in spite of the fact that it is a disease of very infrequent occurrence, particularly in the United States. Its etiology is obscure, but all observers claim it to be of neurotic origin. It frequently accompanies various nervous diseases, such as posterior spinal sclerosis, degeneration of the peripheral nerves, chronic myelitis and acute spinal meningitis. In many cases it is difficult to determine just what the nerve defect is, but it probably has an origin in the vasomotor centers, or, as Schwimmer and others teach, it may be an atrophic neurosis.

Dermatitis herpetiformis is another of the rare diseases in which the etiology is obscure, but the concensus of opinion is that mental worry and anxiety predispose to an attack. I have had a number of patients with this disease, and at least in 90 per cent. there was some shock to the nervous system before the cutaneous outbreak occurred. Worry and loss of rest probably has a predisposing etiologic influence, but this does not militate against the theory of a neurotic origin, but rather strengthens it.

In people whose systems are run down from overwork and worry we frequently observe a rather rare disease known as lichen planus, an affection characterized by the appearance of pinhead or pea-sized flat papules with planed-off, shining tops, or, if the disease is further advanced, there is a slight scaliness. In our large cities many of the victims of this disease are girls who do hard work in badly ventilated factories or workshops. The remedies are simple: tone up the nervous system, insure proper action of the skin, relieve worry, etc.

In 1874 Raynaud of Paris published a monograph on a condition known as symmetrical gangrene of the skin. Since that time the disease has been called after him and now is known as Raynaud's disease. As the former name implies, it is a gangrene symmetrically distributed over the skin, generally affecting the fingers and toes, While the pathology is not by any means clear the disease is now generally understoo' o be due to a spasm of the arterioles, though whether this spasmodic condition is of central or peripheral origin cannot be positively stated, Raynaud considered it to be central.

Leucoderma, or whitening of the skin, is generally considered to be neurotic in origin. It is commonly understood that a person having white spots on the skin is apt to have some other neurosis. Closely allied with this condition is premature grayness of the hair. Almost as far back as can be remembered cases have been reported where the blanching of the hair has been attributed to sudden and severe nerve shock. The historic case of Marie Antoinette is perhaps familiar to you all. Her hair is said to have turned gray in a night.

It is unfortunate that the subject of alopecia has to be gone into at all, as there is so much discussion and argument regarding this disease. Many good observers contend that there is only one cause, namely, nerve interference, while others equally well versed in dermatologic etiology claim that the sudden falling out of the hair in patches is undoubtedly due to the presence of some parasite, probably some form of the tricophyton. I will not attempt to prove or disprove the correctness of either theory, for there are plenty of cases which show that at least certain forms of the trouble are of trophoneurotic origin. Crocker, in his admirable work on skin diseases, classifies this disease in four distinct forms: First, universal cases developing rapidly and not necessarily in patches; second, cases in which one or more patches occur over the course of a nerve or the site of an old injury; third, in which small depressed atrophic spots occur (Neumann's alopecia circumscripta); and, fourth, parasitic cases. The first three he declares to be of neurotic origin. Universal alopecia frequently follows fright or a fall upon the head, and it is no uncommon thing to see bald patches after injury of the nerves about the head.

I have rapidly given you a short list of those diseases which we believe to be of neurotic origin. There are many others in which this etiologic factor is more uncertain, but for fear of tiring you I will refrain from going more deeply into the subject. From what has already been said, I trust that you may be able to glean some few grains of useful knowledge, so that when you have a difficult and obstinate case of skin disease to treat you will be on the alert to find out the workings of all the organs in the body, and particularly of the nervous system, always remembering that the cause of the cutaneous outbreak may be far remote from the site of the disease. When you have learned to do this, dermatology will cease to be a difficult study, and you will wonder why you ever thought it uninteresting and obscure.

MEDICAL PROGRESS.

Tuberculosis of the Spinal Cord.—SCHLESINGER (*Deut. Zeit. für Nervenheilkunde*, Bd. viii, Hft. 5 and 6) describes an interesting case of solitary tubercle occurring in the cervical cord. A healthy man was suddenly attacked with dizziness and pain, and difficulty in swallowing, symptoms which in great measure disappeared to return later in the disease with greater severity. There was disturbance of temperature sense, and shooting pains in the face, back of the head, and arms. The sense of touch and pain remained undisturbed, but that of muscular position was partly lost. As the disease progressed, atrophy of the muscles of the right hand and arm, and to a less extent, those of the left, developed, and there was stiffness of the neck with tenderness. The autopsy showed a fully developed tubercle in the cervical cord, covered in front and at the sides by a very thin layer of white matter, while behind, it was in places directly in contact with

the membranes. The gray substance of the cord was completely atrophied.

This is not the usual form in which tuberculosis of the cord manifests itself; more common is the symptom complex known as Brown-Sequard's, or a simple hemiplegia, or a complete transverse lesion of the cord. The symptoms here described are those of destruction of the gray matter, and the case may therefore properly be called "central tuberculosis." These central symptoms are often seen in spondilitis and in gliomata, conditions usually accompanied by remissions that are absent in tuberculosis.

The Origin of "Ascending" Suppurative Pyelonephritis.—BAZY (*Centralbl. für Chirurgie*, May 8, 1897) is of the opinion that in most, if not all, instances of suppuration of the kidney and its pelvis, even the so-called "ascending" pyelonephritis, the infection is derived through the blood-vessels and not through the ureters. Experiments show that the introduction into the pelvis of the kidney of pathogenic microbes is not sufficient in itself to set up suppuration. There must also be as a predisposing cause, a kinking or compression of the ureter sufficient to produce a backing up of the urine. This explains why suppuration so often occurs in a single kidney.

A New Method of Suturing.—In the *Centralbl. für Gynekologie*, May 15, 1897, ZWEIFEL describes a new method of applying a continuous suture which possesses the very great advantages of simplicity and rapidity of application. It is the stitch used on many "double-thread" sewing-machines, and is applied in the follow manner:

A straight blunt-pointed needle and the curved needle in a handle with an eye in its point (Peaslee) are both threaded and the threads fastened at one end of the line of suture. The Peaslee needle is then thrust through both edges of the cut, and the straight needle is each time passed through the loop in the eye of the curved one, and so a continuous suture is made, there being on each side of the incision a thread, while the crossings of the thread are all concealed.

In places where the skin is thin, this is of advantage, as it causes the fold to rise slightly in the middle; but in thick or fat skins this rise separates the epithelial edges too far, and then an extra precaution is necessary; either a turn of the thread in the straight needle must be made about the other before each stitch is taken, or a third thread is employed, which must be passed from one side to the other of the cut each time before the suture is passed through the skin. This keeps the edges flat.

A Prolonged Case of Diphtheria.—JESSEN (*Centralbl. für Inn. Med.*, May 15, 1897) reports a case of diphtheria that was unusual by reason of the length of time the disease persisted. The attack began, in a girl aged nineteen, by symptoms of general infection, and a facial erysipelas of a mild type. On the fourth day there appeared a typical ulceration on the right side of the throat, the cultures from which contained virulent diphtheria bacilli. From its starting point the membrane spread to the nasopharynx, the other side of the throat, and to the nose, while all attempts to stop it by the use of Behring's serum, as well as by the best known local applications, were failures. Paralysis of the palate followed four weeks after the beginning of the illness. Lactic acid was efficacious in removing the membrane, which, however, quickly reappeared. Mild gargles, as of salt water, seemed to be of most service. The secretion was tested at numerous times during the continuance of the trouble, and it was invariably found to contain Löffler's bacilli. Clinical evidences of the disease persisted for more than five months.

THERAPEUTIC NOTES.

Treatment of Wounds with an Ointment of Yellow Oxid of Mercury.—MAJEWSKI of Prezemysl has for some time used as a dressing for wounds an ointment containing one part of yellow oxid of mercury and three parts of vaselin. This ointment possesses a very powerful antiseptic action and rapidly stops all purulent processes and promotes granulations. The skin is washed with soap, and then with ether or turpentine. The wound is cleansed with normal salt solution, and if it is deep is filled with corrosive sublimate gauze. Over this is laid a piece of gauze, spread with the oxid ointment, of the exact size of the wound. In this way all danger of intoxication from absorption of the ointment is avoided. The dressing is discontinued after five or six days in order to avoid too great stimulation of the granulating surface.

By the use of this method of treatment, Majewski was able in ten days to sew up an abscess cavity which at the time of incision contained over sixteen ounces of bloody pus. Six days after the suture the stitches were removed, the wound being completely healed. In the beginning of this treatment a patient occasionally developed mercurial eczema, or salivation, or diarrhea, but there were no severe cases of poisoning. These accidents were all due to the fact that the ointment was allowed to come in contact with the skin.

Vibratory Massage in Cardiac Palpitation.—The good effects of rhythmic vibrations upon nerves, muscles, and upon both local and general circulation are well known. Recently BAHR (*La Semaine Méd.*, May 19, 1897) has employed them with success in a case of tachycardia. The patient in question suffered from mitral insufficiency which was well compensated, but produced violent palpitation at times. Bahr saw him in one of these attacks, when the feeling of oppression was intense and the pulse was beating 140 times a minute. By means of the palm of the hand laid flat upon the cardiac region, a series of rhythmic compressions was administered to the thorax. Under the influence of this maneuver, the number of pulsations fell rapidly to sixty-eight per minute and all the subjective symptoms rapidly disappeared.

Treatment of Polyneuritis in Acute Rheumatism.—In the course of acute articular rheumatism patients often complain of spontaneous pains simulating a new joint affection. Examination will show, however, that no signs of inflammation of the joints are present, but that the pain corresponds in its location to some nerve trunk, which is

also sensitive to pressure. In other words, there is a polyneuritis complicating the rheumatism.

For this condition STEINER (*La Presse Méd.*, May 29, 1897) recommends the following prescription:

℞ Salicylate of soda . . . ʒ i
Iodid of potash . . . gr. xii–xxiv
Water . . . . . ʒ vi.
M. Sig. To be taken in divided doses during the day.

Quinin in Incomplete Abortion.—SCHWAB (*La Semaine Méd.*, April 28, 1897), in incomplete abortion, has seen very good results follow the administration of two doses of quinin, each of eight grains, and taken fifteen minutes apart. Ergot was formerly much used to stimulate uterine contractions, but on account of many unpleasant complications it has been adandoned in abortion. Quinin is equally valuable in stimulating the uterine muscle and does not produce a tetanization, so that there is no danger of retention of the placenta. In fact, Schwab has employed it in severe cases of post-abortive retained placenta, and in every case the placenta was expelled after a period averaging four hours and a half.

As the use of quinin in this dose (sixteen grains) is absolutely devoid of danger, it seems advisable to employ it in all cases of delayed abortion when there is no especial reason for immediate operation, for if it fails operation can then be resorted to.

Hydrastis Canadensis in Bronchitis.—SAENGER (*Centralbl. f. inn. Medicine*, May 1, 1897) has found hydrastis canadensis an excellent remedy in certain forms of chronic bronchitis. In the beginning of an attack it has little effect, but later, when the mucous expectoration has become mucopurulent in character, the effect of its administration is striking, as it lessens the tendency to cough, loosens the expectoration, and makes the secretion of the bronchial mucous membrane thinner, and changes its character from a purulent or mucopurulent to a mucous one. It also causes most of the physical signs of bronchitis to disappear. The effect of hydrastis is more lasting than that of opium, and its expectorant action is at least as great as that of the expectorants in common use. Sänger gives only the fluid extract in doses of from twenty to thirty drops four times daily.

A Resorcin Salve for Acne.—EHRMANN (*Ther. Wochenschr.*, May 9, 1897) recommends in acne, abdominal massage, cascara sagrada, Carlsbad salts, etc., to regulate the intestinal action. For a local application, and one which fulfils the double requirements of preventing the stopping up of the sebaceous follicles and of disinfecting without irritating the skin, he uses a fifteen-per-cent. resorcin salve, which should be made thick, *e. g.*:

℞ Resorcin . . . . . 3 parts
Lanolin . . . . . 15 parts
Simple ointment . . . . 5 parts.

The salve should be left for fifteen hours on the skin and then be washed off with a mild soap.

After a time the skin peels off, and the treatment with resorcin must be omitted and a simple salve substituted for a few days. Pimples should be incised, and if they are superficial the contents may sometimes be extracted with a mouse-toothed forceps. If too deep for this, or in the early stages after incision and evacuation of the contents, a drop of twenty-per-cent. solution of carbolic acid in alcohol should be inserted to prevent further development of bacteria.

Treatment of Congenital Hernia in Children with Injections of Chlorid of Zinc.—LANNELONGUE (*Ther. Wochenschr.*, April 25, 1897) has for the past six months made use of a ten-per-cent. solution of chlorid of zinc in order to obliterate the inguinal canal in cases of congenital hernia in children. The technic is very simple. Naturally, aseptic precautions are observed. After the reduction of the hernia an assistant, by the pressure of his finger, closes the communication between the hernial sac and the peritoneal cavity. The operator locates the spermatic cord and holds it with one finger to the outer side. On the inner side, beginning at the upper end of the canal, injections of five or six drops each of the zinc solution are made in four places along the length of the canal. The cord is now slipped to the inner side, and four more injections are made to the outer side of the canal. A compress now takes the place of the assistant's finger, and is held in position with a Spica bandage. The whole procedure occupies only two or three minutes. It is without danger, and thus far has given satisfactory results in Lannelongue's hands.

Milk and Eggs in Typhoid Fever.—In the *Charlotte Medical Journal* for May, 1897, ELY speaks of the dietetic treatment of typhoid fever. He has found no food which he considers preferable to milk, either plain, boiled, peptonized, or with lime water or soda, according to indications. Two quarts a day is the minimum amount given, and no distinction is made between night and day. In some cases an amount of milk which, given every three hours, would be rejected, can be retained if given in divided portions every hour or every half hour, or if need be, every fifteen minutes. Milk may be supplemented by beef juice or eggs. Of the latter he has sometimes given with benefit twenty whole or the whites of forty per day.

Benzoate of Mercury.—The benzoate of mercury is a soluble salt, not only in water, but also in alkalin solutions of a chlorid, or an iodid. The following preparation is the one most employed by GAUCHER:

℞ Benzoate of mercury . . . gr. 4
Hydrochlorate of cocain, Chlorid of sodium } aa . . gr. 1
Sterilized water . . . . ʒ 1.

For hypodermic use, fifteen minims per day for one week; then two minims per day. The cocain may be omitted without any unpleasant effects, as the pain of injection is not worth considering.

The Proper Temperature of Milk for the Baby.—SMESTER (*La Presse Med.*, May 22, 1897) has found the temperature of milk as drawn from the breast to be about the same as that of the surface of the body, that is 97° to 98° F. He, therefore, says that the milk in a baby's bottle should not exceed this temperature, and, if anything, should be even a little below this point. He claims to have observed that a baby will take with evident repugnance, milk which is slightly above 97°.

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SATURDAY, AUGUST 7, 1897.

HYDROPHOBIA AND RABIES.

THE time is now upon us when the sun enters the constellation of the Great Dog (*Canis Major*), and is nearly in conjunction with the dog-star Sirius. These days, popularly known as "dog days," have become more or less associated in the public mind with the prevalence of hydrophobia. This idea is so universal, and has been stimulated so much of late by the attention drawn to rabies through the researches of Pasteur and his disciples, that many people regard with horror the approach of a dog during this season, and the entire civilized world is in such a state of nervous excitement in regard to the malady that the slightest scratch upon the skin made by the teeth of a dog, whether he be afflicted with rabies or not, is very apt to cause the person so wounded to present all the characteristic symptoms of hydrophobia.

The sensitiveness of the public to this popular notion, and the harm that it does to both man and beast, have been pointed out in the July issue of *Our Animal Friends* by Mr. John P. Haines, president of the New York Society for the Prevention of Cruelty to Animals. In his commendable efforts to reassure the public, Mr. Haines has rather overdone the matter. He fails to appreciate entirely the scientific character of Pasteur's researches, and casts a suspicion upon all his work in this field. This is to be deprecated and regretted, for, aside from this, the article is based upon good authority, and is calculated to do much good.

First of all, Mr. Haines points out that hydrophobia[1] is one of the rarest diseases with which humanity is afflicted; that rabies is one of the rarest diseases of the dog, and is no more likely to occur in July or August than in December or January. In confirmation of the former statement, the writer asserts that during the thirty years of the existence of the American S. P. C. A., there has been recorded upon its books no well-established case of rabies, either in dog or man.

The rarity of rabies is confirmed by the best medical authorities. Biggs, in writing upon this subject in Dennis' "System of Surgery," asserts that under all conditions rabies is a comparatively rare disease in man. In New York during the ten years ending 1891, there were only nine deaths reported to the Health Department as being due to rabies. There is no statement as to whether the report was verified or not.

Dercum ("Nervous Diseases by American Authors") says that "hydrophobia is a rare disease in the United States. Dulles, from June 1, 1888, to January 1, 1894, collected seventy-eight cases, an average of fourteen *per annum*. But after investigation, Dulles is said to have pronounced the great majority of these cases utterly incredible and wholly spurious."

Gray ("Nervous Diseases") declares there is not a neurologist in New York City who has seen in his practice more than one case of hydrophobia, and it is well known that Spitzka, Brell, Stockwell, and others, besides those already mentioned, entertain a a strong feeling of skepticism regarding the pathologic entity of such a disease.

How then shall we account for the frequent reports of cases of rabies? In the first place every dog which happens to be suffering from any disease whatever during the dog-days is at once set down as "mad." As Mr. Haines says, a frightened dog, cruelly pursued by thoughtless children with the cry of "mad dog," is regarded with terror, and any

[1] It would be well to drop this word from medical nomenclature. Rabies is the same disease in man and dog, and should have the same name. "Hydrophobia" is founded on an entire misconception.

report of a case of rabies, however ill founded it may be, is at once communicated to the newspapers, and through them spreads consternation to hundreds of nervous people.

It must be remembered, as has been said, that rabies in a dog is an extremely rare disease. Probably not one dog in a thousand which is thought to be mad is really afflicted with the malady. It is important that not only the profession but the laity should understand that all dogs perspire excessively through the glands of the mucous membrane of the mouth and tongue during the hot weather. If a dog has been running, this perspiration may even be lapped into froth, and the dog may be said to be "foaming at the mouth." This, however, does not constitute rabies. In rabies, the secretions of these glands become pathologic, and the discharge from the mouth is thick, tenacious, and ropy, and in order to disengage it from his mouth, the dog frequently tears at it with his claws.

In order that some definite scientific data may be obtained for determining the frequency of rabies in dogs, and upon which to base the probability of injuries, received from dogs, developing rabies in man, the New York Board of Health, as was pointed out in a recent issue of THE NEWS, has provided for investigation of every case of supposed rabies reported in the city. Arrangement has been made by it through the police department for securing and taking to its laboratory every animal which may be supposed to be suffering from rabies. A thorough investigation will then be made through inoculation of rabbits, guinea-pigs, etc. Such careful research will relieve the victim of a scratch or bite of a dog of the terrifying apprehension which invariably hangs over him till he is assured of the healthfulness of the dog, or guarantee to him proper treatment if it becomes certain that the animal was afflicted with the malady.

The long period of incubation of rabies keeps the nerves of the victim of a dog bite in a state of supreme tension for so long a period that he not infrequently succumbs to nervous exhaustion and experiences all the phenomena of the disease as a case of pseudo-rabies, or lyssophobia.

"A nervous person bitten by a dog, either rabid or supposed to be so, may display within a few months, or even several years afterward, symptoms resembling hydrophobia. There have been instances published, as lyssophobia, in which seizures have become frequent, and the patient has died exhausted. Dulles has called attention to a number of diseases in which symptoms of hydrophobia may occur, and he has rightly urged a more thorough and systematic examination of patients, and a greater caution in pronouncing upon the irregular symptoms which, in nervous people, are apt to follow the bite of a dog." (Dercum.)

Biggs says numerous cases have been reported in which patients apparently suffering from true rabies suddenly recovered when the animal by which they were bitten appeared before them well, or when they were convinced in some other way that the dog had not been suffering from rabies. When we realize, also, that only fifteen per cent. of the persons wounded by a dog which is known to be rabid suffer from the disease, the probability of infection becomes still less. It is safe, therefore, to accept the conclusions of the lay writer above referred to, when he says:

"Remember these points: (1) There are more than a million of chances to one that any dog which is supposed to be mad is not mad at all. (2) In all probability any dog by which a person may happen to be bitten is not mad; and (3) even if a person is bitten by a dog which really is mad, the danger of hydrophobia is very slight indeed."

ECHOES AND NEWS.

Course of Study Extended.—The Medico-Chirurgical College of Philadelphia has extended its course of study to four years.

An Eighteen-Pound Baby.—A woman at Fishkill Landing, N. Y., has recently given birth to a baby girl weighing eighteen pounds.

Indian Mails Disinfected.—The steamer "Majestic," which recently arrived at the port of New York, carried thirteen bags of mail from Bombay. This will be thoroughly disinfected before it is distributed.

Swallowed Tooth-filling.—At Middletown, N. Y., a man recently swallowed a gold filling which had fallen out of a tooth. The man is now seriously ill with appendicitis as a result, it is claimed, of the accident.

The Jubilee of "Le Scalpel."—This well known medical journal, which is published at Liege, Belgium, and was founded by the late Dr. Festraerts, has recently completed the fiftieth year of its existence.

The Plague and the Vultures.—Since the plague made its appearance in India there has been an enormous increase

in the number of vultures, which devour the bodies of the dead consigned to the "Towers of Silence."

The Murphy Button in Germany.—It would seem that the Murphy button is quite extensively used in Germany. Czerny not long ago reported to the German Surgical Society fifty-five recent cases in which the button was employed.

Consumptives in the Southwest.—It is reported that in El Paso, Texas, there is a growing sentiment against consumptives flocking to the Southwest, and the desire for sanitary measures against the disease is rapidly gaining ground.

Smallpox in Montreal.—It is reported that five cases of smallpox have been discovered in Montreal. The cases are scattered about over the city and cannot be traced to any common origin. Vaccination is being carried on extensively.

British Surgery in America.—Mr. Christopher Heath, late President of the Royal College of Surgeons, England, has accepted the invitation to deliver the second course of Lane Medical Lectures at the Cooper Medical College, San Francisco.

Hospital Salaries Reduced.—It is reported that a twenty-per-cent. reduction in the salaries of many of the employees of Bellevue Hospital was made on August 1st. It is claimed that the appropriation is insufficient to meet present demands.

Sunstrokes in New Orleans.—It is said that a large number of sunstrokes occurred in New Orleans during the June hot wave, and that more than half of the cases proved fatal. This is surprising because, as a rule, sunstroke is rare in that city.

Another Case of Hiccoughs.—In the Cook County Hospital, Chicago, there is a case of hiccoughs which it is feared will prove fatal. The patient is a man, seventy-four years of age, who for ten years has been subject to periodic attacks of hiccough.

Death of Professor Schutzenberger.—The eminent chemist, Professor Schutzenberger, is dead. He was born at Strasburg, and studied medicine there. He became Professor of Chemistry at the College de France in 1876, and was the author of many works on chemistry.

A Pension for M. Henri Dunant.—The Russian branch of the Red Cross Society has granted a pension of a thousand roubles annually to M. Henri Dunant, of Geneva, whose name is well-known in connection with the foundation of that Society, and who is in greatly reduced circumstances.

X-Rays Applied to Mining.—Dr. F. E. Yoakun of Los Angeles, Cal., has applied the X-ray in determining the presence of gold in quartz. He has taken a number of pictures showing gold in ore, the fluoroscope being used for the purpose. It is believed that the discovery will be of use to geologists and mineralogists in prospecting.

Dr. Ohlmacher to Investigate the Etiology of Epilepsy.—Dr. A. P. Ohlmacher of the Cleveland College of Physicians and Surgeons has assumed direction of the pathological laboratory of the Ohio Hospital for Epileptics at Gallipolis in that State, where it is proposed to make investigations bearing upon the etiology and pathology of epilepsy.

Afraid of Appendicitis.—In Wayne County, N. Y., several cases of appendicitis which have occurred there have been attributed to berry seeds. Consequently berries are a drug in the market. Housewives refrain from preserving raspberries and blackberries, and farmers are forced to evaporate their berries or convert them into wine.

A Woman Physician for Mohammedan Women. — Dr. Theodora Krayewska, a Pole by birth, is the first woman appointed to attend Mohammedan women in Bosnia, which is under Austrian rule. The appointment comes under the head of army surgeons, therefore she is obliged to wear a uniform. Her rank is equal to that of a captain, and her salary the same.

Mississippi Valley Medical Association.—The next meeting of this Association will be held at Louisville, Ky., October 5, 6, 7 and 8, 1897. The address on Surgery will be delivered by Dr. J. B. Murphy, of Chicago; the address on Medicine by Dr. John V. Shoemaker, of Philadelphia. The title of papers should be sent to Dr. H. W. Loeb, secretary, St. Louis, Mo.

Delegates to the International Congress.—Sixty Mexican physicians, on their way to the International Medical Congress at Moscow, were booked to sail on the steamship Normannia on July 29th. That vessel was not able to sail on account of a flaw which was discovered in her shaft, and her passengers were transferred to another steamship which sailed on the following day.

Infected Rabbits at Large.—The news comes from Paris that a number of rabbits have been stolen from a hospital where they were being used in the culture of germs of cholera, diphtheria, the plague, and other diseases. It is feared that the rabbits will be sold for food, but the bacteriologists announce that even if the rabbits are eaten there is no danger if their flesh is well cooked.

Johns Hopkins Loses a Part of Its Income.—The news comes from Baltimore that a decision was handed down in the United States Circuit Court by Judge Goff, by which the Johns Hopkins University and other holders of Baltimore and Ohio stock are declared not preferred creditors. If this decision is upheld in the Supreme Court, the University will lose about $50,000 of its annual income.

Eudoxine.—In the article by Dr. Reynold W. Wilcox, entitled "The Newer Preparations of Bismuth," which appeared in the issue of THE MEDICAL NEWS of July 31st, by a typographical error the preparation chemically known as tetra-iodo-phenol-phtalein was referred to as *endoxine*, instead of eudoxine, a well-known gastro-intestinal anti-

septic placed upon the market in this country by Messrs. Stallman & Fulton.

Typhus Fever at Pekin.—According to the lately issued volume of the Medical Reports of the Imperial Maritime Customs, China, typhus fever is epidemic at Pekin in the spring of each year. The mortality, although considerable, is not so great as that from cholera. The volume also contains an essay upon typhus fever by Dr. Matignon of the French Legation at Pekin, who has made a most careful and thorough study of the disease.

Wears Gloves When He Operates.—Professor J. Mikulicz now wears gloves when he operates, because he believes it is impossible to render the hands perfectly aseptic. The gloves are of cotton and can be washed and boiled and repeatedly used. If the operation is short and aseptic, one pair of gloves is sufficient; if not, he changes them two or three times. His assistants also wear the gloves. The use of rubber gloves by the surgeons of New York and their assistants is a very common practice.

Occupations in America.—According to the bulletin of the Eleventh Census, the total number of people engaged in occupations of all kinds in 1890 was 22,735,661. Females form 17.22 per cent. of this number. Professors and teachers, of whom there are 347,344, form the largest professional class; physicians and surgeons, 104,805, are next in number; then come lawyers, 89,630; clergymen, 88,203; government officials, 79,664; musicians, etc., 62,155; engineers and surveyors, 43,239; artists and art teachers, 22,496; journalists, 21,849, and actors, 9,728.

Reading and Eye-fatigue.—The *Medical Press* points out the fact that the size of the printed characters is a more important factor in the production of visual fatigue than any other, and the conclusion arrived at is that type less than 1.5 millimeters in height should not be employed. The degree of illumination, so far as concerns daylight in fairly lighted rooms, is of much less importance, although deficient illumination, especially when the source is an artificial light, will, under certain circumstances, induce visual fatigue more rapidly even than small type. Whenever artificial light is employed, a white light is said to be preferable to a yellow light, contrary to general opinion.

Hams and Hairs.—A case was recently tried in Birmingham, Eng., to decide whether a ham which was offered for sale as an English ham was really what it was represented to be. A point in the case was that the ham in question bore three hairs growing from a single root, and this was put forward as evidence that the ham must be American. It was shown by the defence, however, that three hairs growing from one root is a characteristic of the Berkshire breed of pigs, although not entirely confined to these. As the "three-hairs" proof was the only evidence offered to show that the ham was American, this was considered too weak a support, and the case was dismissed.

Burned by Roentgen Rays.—An unusual case of burning by the X-rays recently has been reported. A young woman consulted a dentist on account of pain in the upper jaw. As nothing was found there to explain the symptoms, the trouble was supposed to be in the antrum, and she was advised to have a skiagraph taken in order to clear up the diagnosis. This was done, two exposures being necessary, the first lasting about eight minutes, the second thirteen. There were no signs of any ill effects until two days later, at which time the woman's face began to swell, blisters then appeared on the face, neck, shoulder, and arm, and the hair on that side of the head came out, leaving one half of the scalp perfectly bald.

The Faculty of the Southwestern Medical School.—The faculty, as far as elected, of the newly organized Southwestern Medical School of Texas, is as follows: J. M. Pace, M.D., professor of clinical medicine and diseases of children, and president of the faculty; S. H. Stout, M.D., professor of obstetrics; C. M. Rosser, M.D., professor of theory and practice of medicine; H. K. Leake, M.D., professor of diseases of women; C. H. Sherman, M.D., professor of anatomy; S. E. Milliken, M.D., professor of general and orthopedic surgery; H. L. McLaurin, M.D., professor of materia medica and therapeutics; R. H. Chilton, M.D., professor of ophthalmology and otology; L. Myers Connor, Ph.G., professor of chemistry; Hon. Dudley G. Wooten, lecturer on medical jurisprudence.

Medical Schools in Denver.—The Supreme Court of the State of Colorado has forbidden the University of Colorado from carrying on any part of its Medical Department in Denver, because the constitution locates the University itself at Boulder. In consequence of this, the members of the Faculty resident in Denver have resigned, and the larger portion of them have united with the Medical Department of the University of Denver. Among those who have thus strengthened the Denver Medical School are: Drs. H. T. Pershing in Diseases of the Mind and Nervous System, S. G. Bonney and H. B. Whitney in Medicine, Charles A. Powers in Surgery, Walter A. Jayne in Gynecology, George B. Packard in Orthopedics, L. E. Lemen and J. W. O'Connor in Clinical Surgery, T. E. Taylor in Clinical Obstetrics, and John Chase in Clinical Ophthalmology. The Faculty of the School has been further enlarged by the election of Drs. P. V. Carlin in Obstetrics, W. H. Bergtold and W. B. Fenn in Pathology, and Carroll E. Edson in Therapeutics.

CORRESPONDENCE.

A FURTHER WORD FROM DR. LEFFINGWELL.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In THE MEDICAL NEWS of July 24th I find what purports to be "a reply to Dr. Leffingwell." The privilege of reply by a person unaddressed is rather a matter of favor than right; and the letter you did me the honor to print was intended only for the consideration of my professional brethren, and not for veterinary experts, however eminent in sciences pertaining to agriculture. Your correspondent would imply doubts as to my

acquaintance with our mother-tongue; I shall not question his own evident familiarity with a vigorous vernacular, which has its place,—but that place is not in the consulting-room of medical men. Any formal rejoinder I do not care to make; but one or two points in his letter are so imbued with inaccuracy that I should like to refer to them.

"Is not the British bill sufficiently harassing and destructive to experimental research?" asks your learned correspondent, in a question that insinuates its own reply. I suppose no impression is more widely diffused among medical men in this country than the detrimental effects of the English law: Professor Bowditch of Harvard Medical School stated in his letter to Senator Gallinger that it had "inflicted a serious blow upon English physiology." Is this true? Who should know best—the opponents to all legislation in this country, or the medical men in England who have worked under this law for the last twenty years? I presume the *British Medical Journal* will be taken as a pretty good authority. In an article on "Physiology," which appeared in its issue for June 19, 1897,—not six weeks since—the writer says: "Though we have a Vivisection Act in operation, but few physiologists have had cause to grumble on this score, for the act has been administered by successive Home Secretaries with wisdom and fairness." (p. 1541.) Where is the complaint of serious injury here? But there is other evidence. In a letter I received not long ago from Sir John Eric Erichsen, the eminent surgeon, after stating that vivisections should not be allowed without proper restrictions, he adds: "Experiments on living animals are most carefully restricted in this country. . . . I acted as government inspector for several years, and I can safely assert that the provisions of the act were vigorously enforced, and never to my knowledge contravened." Can it be supposed that if the English law had worked such injury to medical science as some would have us believe, that no reference to such an effect would have been made? Of course the law has been unsatisfactory to some. It has hindered and prevented repetition on English soil of the atrocities which the late Dr. John C. Dalton—a physiologist of no mean repute—tells us that he saw in a veterinary institution on the Continent, than which, he says, "nothing could be more shocking;" it has prevented those abuses of vivisection that the same eminent authority tells us have been done "by reckless, unfeeling, or unskilful persons;" it has hindered the free hand of men referred to by Dr. Theophilus Parvin of Jefferson Medical College in his presidential address before the American Academy of Medicine lately, "who seem, seeking useless knowledge, to be blind to the writhing agony of their victims, and who have been guilty of the most damnable cruelties." I do not know to whom Dr. Parvin alluded when he affirmed that "these criminals are not confined to Germany or France, . . . but may be found in our own country;" but I am sure that wherever they are, they join with your correspondent in affirming that "*no one can tell whose method of investigation is right or wrong*," and that "research should be free." But there are some of us who believe in vivisection for any purpose of good to humanity, but not in vivisection like that which prevails abroad, and which many of us have seen. "*After* the furtherance of science, the saving of human life is the noblest object we have in view," says a recent writer, referring to vivisection. I cannot but think that it will be a sad day for the human race, if ever that shall become the universal ideal of the medical profession.

Regarding the effect of the proposed legislation at Washington in impeding any phase of useful experimentation, I may say that Senator Gallinger—himself a physician (which your correspondent is not)—denies that the law is capable of the construction or of the effect outlined by its opponents in the Department of Agriculture. Here is a difference of opinion; but as between the veterinarian and the physician—one opposing any law whatever and the other an experienced legislator—I prefer the judgment of the medical man.

May I refer to one point in your courteous reply to my letter in THE MEDICAL NEWS? Legislation, you say, is being urged by persons "who have become excited by reading the antivivisection literature sent them by Dr. Leffingwell," etc. This is a mistake. I have never circulated "antivivisection literature;" nor, since July, 1880, —seventeen years ago,—when my first article in advocacy of State supervision appeared in *Scribner's Magazine*, have I ever written a line antagonistic to vivisection when kept in proper hands and surrounded by adequate restrictions against abuse.

ALBERT LEFFINGWELL, M.D.

BROOKLYN, JULY 27, 1897.

[Dr. Leffingwell's quotation from the *British Medical Journal* is convincing as far as it goes, but the paragraph carries an entirely different impression when read in its entirety, as follows:

"There are at present signs that England will not be far behind Germany, or may even take the lead in the future. The antivivisection movement in this country, with which physiologists have had to grapple, has had some share in retarding the progress of physiology here. To-day, though we have a vivisection act in operation, but few physiologists have had cause to grumble on this score, for the Act has been administered by successive Home Secretaries with wisdom and fairness. To-day, also, we can hardly doubt that the antivivisectionists, though a noisy section, constitute a very small section of the public. The discovery of anesthetics, the jubilee of which is only just over, has robbed experiments on animals of the terrors they formerly possessed." The extreme attitude of the antivivisectionist element was exemplified by a bill which they presented to Parliament, and which, according to a writer in the *British Medical Journal* of the same date, "would probably have completely stopped the carrying out of physiological investigations in England."

This entire discussion in regard to the bill before Congress regulating animal experimentation in the District of Columbia resolves itself into this, namely: No cruelty has been discovered in any of the laboratories of the District;

the present law is sufficient to prevent any cruelty, therefore the enactment of the proposed law is unnecessary.—EDITOR.]

THE ALLEGED MICROSCOPIC POWER OF THE NORMAL EYE.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In the *Medical Record* of January 23, 1897, page 119, Dr. F. L. O. Roehrig of Pasadena, Cal., published an article, entitled "Microscopical Power of the Natural Normal Eye," an article which we should not indifferently allow to pass unnoticed, not because it may "gradually lead to perhaps many as yet wholly unexpected important scientific truths and various valuable new discoveries," but because it is apt to convey confusion and erroneous conceptions of a phenomenon which has been long and well understood.

Dr. Roehrig, when he looked at his mustache at a distance of an inch or two, more or less, saw every hair greatly magnified, just as seen through a microscope. Each hair stood out plainly and distinctly and as though forming a tube, which, according to all appearance, was transparent, rather colorless, hollow, and empty, bounded, as it were, on both sides by a generally well-marked bright white line or border. The size of the magnified hair-tubes varied from that of an ordinary darning-needle to the volume of a small lead-pencil; it increased gradually in proportion as he moved these tubes slowly upward from the chin, and it seemed to reach its maximum when seen nearly high enough to be somewhat on a level with the eye.

The explanation of the phenomenon rests in the fact that the eye cannot accommodate at a smaller distance than that of the near point, which requires the maximum of accommodation. Dr. Roehrig looked at the hairs at a distance of an inch or two, more or less. The near point (*punctum proximum*), *i.e.*, the nearest point of distinct vision, in normal eyes lies, according to Donders, at the age of ten years at 2.8 inches from the eye; at twenty years, 4 inches; at thirty years, 5.7 inches; at forty years, 8.88 inches; at fifty years, 16 inches, etc. Light emanating from each point of an object placed at the distance of the near point, after passing through the pupil, forms a luminous cone with a circular base in front, which will impinge with its apex on the retina, when the eye is in the state of its maximal accommodation, and form a well-defined image of each point, and consequently of the object, so that the object is seen distinctly. If, however, the object is brought nearer to the eye (to a point to which the eye cannot accommodate), the apex of the pencil of rays will fall behind the retina. Then not a single point but a circle of the retina, corresponding to a circular section of the luminous cone, will be illuminated, *i.e.*, a *circle of diffusion*, will result, and the image will become diffused and indistinct. A hair, under these circumstances, will appear as an ill-defined dark stripe. The same may be observed not only if an object is placed nearer to the eye than the near point, but at any distance if we accommodate at a longer or shorter distance than that of the object.

The well-known Scheiner experiment very clearly illustrates these conditions. (*Oculus sive Fundamentum Opticum*, Innsbrück, 1619.)

If a pin held vertically toward the luminous sky is fixedly looked at through two small holes in a card not further apart than the diameter of the pupil, and placed horizontally (and *vice versa*), we see the pin distinctly. If now we fixate an object nearer or farther than the pin, the pin appears double. The same can be objectively demonstrated with a convex lens before which is placed an opaque screen with two holes. The rays proceeding from the luminous point through the holes are focused by the lens, and a piece of paper placed at the focusing point will show a well-defined image of the luminous point. If the paper is placed in front of the focus or behind it, it will receive the two small pencils of rays corresponding to each hole separately; each pencil will make its own circle of diffusion and show two images. If we substitute for the lens the refracting media of the eye, and for the piece of paper the retina, it follows that a point of the retina will be illuminated if the retina lies in the plane of the focus of the rays, but two points (*i.e.*, circles of diffusion) if it lies in front or behind the focus of the rays.

An object placed so close to the eye that the eye cannot be accommodated to it may, however, be seen distinctly if we look at it through a small hole in a card. The base of the luminous cone penetrating the eye becomes smaller, and also its sections, that is, the circles of diffusion of the retina. The object thus appears even larger than if observed in circles of diffusion at the same distance without the hole, and becomes still larger if the hole is moved away from the eye. (H. v. Helmholtz, "Handbuch der physiologischen Optik," 2 A., p. 118.)

That the state of refraction does not make any difference, except in degree and with some modifications, will readily be conceived. Therefore, it is erroneous to say, as Dr. Roehrig does, "Those, however, whose visual powers are even in the least degree vitiated by anything anomalous or abnormal, such as myopia, presbyopia, hypermetropia, astigmatism, etc., cannot reasonably be expected to possess or acquire the necessary aptitude for those microscopic perceptions." The law (of faulty accommodation) itself remains unaltered. It is only modified, that is, in astigmatism, by unsymmetrical monochromatic aberrations. The circles of diffusion of a luminous point are changed into stellate figures, the lightest points of which are multiplied images of the luminous point. A luminous line will appear in an astigmatic eye as a light stripe, in which multiple (from two to six or eight) images of the line are recognized. This is generally called *polyopia monocularis*. But even here the condition is that the eye is not accommodated to the object.

The only case in which we might speak of a magnifying (not microscopic) power of the naked eye is in very high degrees of myopia. At a distance for which a normal eye would require a magnifying lens, small objects may be seen by a myopic eye distinctly and, on account of their nearness, magnified.

Another proof that Dr. Roehrig saw the hairs in circles of diffusion is that "one or two of those tubes appeared in beautiful rainbow-like colors." The eye is

not achromatic, but as long as the image is received at the focal distance, or when it is accommodated to the distance of the object, the achromasia is ordinarily hardly noticeable, because the optic media of the eye are in their refrangibility very similar to water, the dispersion of which is much less than that of glass. If, however, the eye is not accommodated to the distance of the object, that is, when the image is formed in front or behind the retina, colored borders appear around the object from chromatic aberration. A pin held before the eye toward the sky will be seen distinctly, with proper accommodation, but if we relax the accommodation or adjust it for a smaller distance, three or more pins are visible parallel to each other, the middle one dark yellowish, and on each side of it one or more of light blue.

C. ZIMMERMANN, M.D.

MILWAUKEE, WIS., July 23, 1897.

OUR VIENNA LETTER.

[From our Special Correspondent.]

THE VIENNA BOARD OF HEALTH AND A FORM OF CONJUNCTIVITIS DUE TO THE DIPLOCOCCUS PNEUMONIÆ—THE OCCURRENCE OF AN INTRACELLULAR IODIN REACTION IN ACUTE SUPPURATION—THE STATUS LYMPHATICUS AND ITS CONNECTION WITH SUDDEN DEATHS IN NARCOSIS, SLIGHT ACCIDENTS, AND THE INFECTIOUS FEVERS.

VIENNA, July 17, 1897.

A notice recently served by the *Wiener Stadtphysikat* (Vienna Board of Health) on the physicians of the city gives an idea of how they do these things legally over here, and calls attention to a very interesting and only recently differentiated type of conjunctivitis:

"The attention of the board of health has recently been called to an inflammation of the conjunctiva occurring especially in school children. Its cause has been demonstrated by bacterial examination to be the diplococcus pneumoniæ (Frænkel-Wexchelbaum). Its symptoms in ordinary cases are moderate catarrh of the mucous membrane, some edema, especially of the upper lids, accompanied by swelling in the semilunar folds and caruncule, with hyperemia of the conjunctiva tarsi, and of the conjunctival folds, a special bluish tint being characteristic of it in this situation. In slight cases, there is not much secretion, though there is a considerable increase of tears. In severer cases, the secretion is plentiful and rather thick and yellowish in color.

"In order to avoid confusion of the above described conjunctivitis with trachoma, and in order to assure the carrying out of the special measures required to prevent the spread of each, you are hereby notified and put legally under obligation in the event of its appearance in your practice to at once report the case to the *Stadtphysikat* in the manner required by law."

This public regulation of contagious eye diseases is all the more interesting, as it has been instituted as a result of sad experience with their ravages when unregulated in various parts of the Empire.

The *rôle* of the diplococcus pneumoniæ is becoming more and more important, as the bacteriologic examination of affected tissues and secretions is being more systematically carried out. It would seem as though any form of inflammation of mucous or serous membranes may be caused by this almost normal member of the oral flora. Suspicion is becoming almost certainty that, in addition, it is the cause of a number of purulent affections in which the ordinary pyogenic bacteria are not demonstrable.

Some work in Dr. Schnitzler's clinic at the Franz Josef Hospital, the results of which recently appeared in the *Wiener Klinische Wochenschrift*, has attracted a good deal of attention in Vienna, and as it seems to furnish an exact and reliable index of the beginning of suppurative processes, it may prove of special service in surgery. In the matter of appendicitis, an index of the beginning of suppuration, *i.e.*, of some definite reliable sign that the catarrhal process has become a suppurative one, has long been a desideratum. From the observations made, there is claimed to be present at the beginning of acute suppuration a characteristic iodin reaction in the blood. This is not attributable to the presence of the extracellular granules described by Ehrlich, and thought by him to be due to extracellular glycogen, but is an intracellular reaction. Ehrlich's iodin-gum solution is used, and the extracellular granules are found increased in suppurative processes, though the authors do not agree in attributing them to glycogen. Besides this, however, some of the polynuclear neutrophile leucocytes exhibit a characteristic yellowish-to-brownish color. This does not occur in the eosinophiles and only in certain polynuclear cells. It was observed but three times in over 1000 preparations in mononuclear cells.

This intracellular iodin reaction occurs only in acute suppuration and disappears twenty-four hours after an abscess has been evacuated. Where an inflammatory infiltrate does not become purulent, but goes on to resorption, it does not occur. Its appearance seems to coincide very closely with the occurrence of suppuration. The intensity of this iodin reaction is dependent upon the course and progress of the suppurative process. The more rapid the purulent degeneration and the more invasive it is, the more intense is the intracellular reaction to the iodin solution. Where a stationary abscess exists, *i. e.*, one where the purulent invasion of tissue is at an end, and nature has walled off the infecting material, the reaction does not occur unless for some reason the natural resistence is weakened and infective invasion once more begins. The subject is not an entirely new one experimentally, and besides Ehrlich, Czerny, and others have noted the phenomena in question, or very similar ones, though not with the definiteness of the present observers.

The status lymphaticus—the lympathic diathesis I suppose we would call it in English if that term has not been already pre-empted for something quite different—is attracting a good deal of attention here from clinicians and pathologists. The subject was first brought into prominence by the observations of Professor Paltauf, the medico-legal specialist. He noted, in a number of cases of sudden deaths from slight causes in comparatively young people, that there was present a hypertrophy of the

lympathic tissues, especially such as were connected with mucous membranes all over the body. The tonsils were hypertrophied, the lymph-follicles at the base of the tongue enlarged, abnormal adenoid tissues were present in the pharnyx, and all along the intestine the lymph-follicles were increased in size and number, With this, there was a dilated heart not dependent on valvular lesions. In addition, there was often present a hyperplasia of the vascular system, a congenitally narrow aorta with small peripheral vessels.

It was noted in a number of cases of death during chloroform narcosis that these conditions were present. People so constituted seemed to stand slight, sudden shocks very badly, A plunge into cold water, for instance, was sometimes followed by fatal collapse. Unaccountable drowning accidents found their best explanation at *post-mortem* in the presence of this peculiar diathesis.

The condition was observed with extreme rarity in autopsies on the middle-aged or older persons. Vital resistance seemed to be so lowered that this diathesis is almost inconsistent with longevity. It was noted that many of the young patients who succumbed unaccountably to attacks of the infectious fevers which seemed comparatively light—influenza, for instance, of typhoid or of pneumonia, had this generalized lymphatic hypertrophy.

The clinicians took the matter up at this point, and the prognosis of the infectious fevers begins to be considered a doubtful matter where lympathic hypertrophy on the visible mucous membranes is observed. When this is accompanied by small peripheral blood-vessels, the prognosis is very guarded. The recalcitrant and relapsing cases of chlorosis are often associated with this condition. In many of the cases there is evidently great delicacy of constitution; development has been slow and incomplete, the genitals may be hyperplastic, hair and other epidermic structures may be incompletely developed. In many cases, however, none of these developmental retardations or anomalies is present. In fact, the individual may be strong, well developed, normally built, and without any external sign of a pathologic diathesis. A case which came up for autopsy not long ago, after a sudden death in chloroform narcosis, occurred in a perfectly healthy-looking man of twenty-eight, 5 feet 8 inches in height, weighing 155 pounds, with no physical anomalies. There was nothing but the widespread lympathic hypertrophy, the dilated heart, and perhaps some slight vascular hypoplasia to account for the death.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

SUCCESSFUL LIGATION OF THE SUBCLAVIAN ARTERY —MUSICAL MITRAL MURMURS IN CONNECTION WITH AORTIC STENOSIS—THE VALUE OF EXPLORATORY LAPAROTOMY *per se* IN REAL AND SUPPOSED MALIGNANT DISEASE OF THE ABDOMINAL ORGANS—THE MORE EXTENDED USE OF ERGOT IN OBSTETRICS—A CLOT IN THE MITRAL ORIFICE PRODUCES SYMPTOMS OF STENOSIS — PARTURITION ACCOMPLISHED DURING PARAPLEGIA.

AT a meeting of the Royal Medical and Chirurgical Society, held May 26th, CLUTTON reported a case of *subclavian aneurism successfully treated by ligation.* The first part of the artery was twice ligated, the aneurism being in the third portion. A few days later a distal ligature was also applied to the first part of the axillary artery. The first ligature was one of gold-beater's skin. After six weeks the radial pulse had returned, presumably as a result of the absorption of the ligatures. The artery was then tied with floss silk. One week later the radial again was pulsating. The axillary artery then was tied, also with floss silk, which caused all pulsation in the aneurism itself to cease, and the dilated vessel gradually shrunk. Care was taken in applying the ligatures to the subclavian artery not to rupture the internal coat. If this takes place, there is danger that the vessel may give way or that a new aneurism may be formed at the site of the ligature.

Clutton also described a case of pharyngeal abscess followed by hemorrhage, and treated by ligation of the carotid arteries on one side. The trouble began with sore throat, followed by an abscess in the pharynx above the right tonsil, which extended into the tissues of the neck. There was considerable bleeding from the abscess cavity, which increased in spite of gauze packing. Accordingly, the bifurcation of the common carotid artery was exposed and the main trunk and both of its branches ligated. The patient made a rapid recovery. Experiments upon animals, as well as clinical data, show the necessity of ligation of both the internal and external carotids in such cases, and as the common carotid can be tied through the same incision, it does not complicate the operation.

At the meeting held June 8th, DICKINSON read a paper upon *musical mitral murmurs in connection with aortic stenosis*, based upon the examination of four cases. In one there was during life much evidence of intraventricular tension and an intense apical systolic murmur which had a musical tone. After death the aortic orifice was found to be almost completely closed, while the mitral valve was practically normal. The musical murmur was attributed to the overdistention of the ventricle, due to the obstruction of the aortic exit and the consequent leakage of the mitral valve under the abnormally high pressure.

In a second case, one of aortic disease of long standing, a murmur developed indicative of mitral regurgitation, with a squeak like that of a mouse. The left ventricle was found to be greatly hypertrophied, and both the mitral and aortic orifices were contracted and thickened. The other two cases were similar to this one. In every instance the musical murmur was attributed to the occurrence of mitral regurgitation in small volume and at a high pressure, the result of ventricular hypertrophy and obstruction.

At a meeting of the British Gynecological Society, held May 13th, SNOW read a paper upon *the value of exploratory laparotomy per se in real and supposed malignant disease of the abdominal organs.* The beneficial results which follow the opening of the abdominal cavity in tuberculosis are well known. In malignant troubles the resulting benefit has been overlooked through the

common practice of sending the patient home as incurable as soon as the wound has healed.

A woman, aged fifty-three, had a rapidly-advancing, very vascular deposit in the omentum, secondary to scirrhus of the breast. After incision the advance was materially checked, the mass diminished in size, there was no ascitic trouble, and the woman lived eighteen months. In a man aged fifty-eight years, with extensive deposit of carcinoma along the whole posterior surface and most of the greater curvature of the stomach, great improvement took place after incision, but the patient was soon lost from observation. An exploratory incision was made into a large sarcomatous mass, infiltrating both recti, of a man aged sixty-four. The growth diminished in size, and eleven months later there had been no bad symptoms, and the patient worked regularly as a sawyer.

ROBSON said that he had operated upon cases in which, upon opening the abdomen, he believed that he had to deal with ineradicable malignant disease, and had closed the abdomen without further procedure, yet the patient had quite recovered. Increased experience will, he thought, show that many of these conditions are not malignant.

On April 13th, MADDEN read a paper on *the larger use of ergot in obstetrics* before the Section on Obstetrics of the Royal Academy of Medicine in Ireland. By the teachings of some recent authorities, a trend of modern opinion has become established distinctly unfavorable to the general use of ergot during labor. The dangers ascribed to its use during labor are: (1) Its possible feticidal effects; (2) the probability of its giving rise to such irregular uterine action as will favor the retention of the placenta, and (3) the direct toxic effects of the drug upon the maternal organism. The first of these reasons has long since been disposed of by Denham and more recently by the experience of Atthill.

As to the second and third reasons, Madden quoted from his personal experience in 150 obstetric cases in which ergot was used. In 148 cases the maternal result was favorable. In 1 case the mother died from septicemia and in 1 from typhoid fever. In 95 cases the drug was given before the birth of the child. In 92 of these instances the children were delivered alive, either with or without forceps. Of the 3 who were still-born, 2 were found to be putrid, having been a long time dead. In 86 of these 95 cases the placenta was normally expelled. In the remaining 9 assistance was necessary four times on account of morbid adhesions, four times for uterine inertia, and once on account of hour-glass contraction.

Madden concludes that many of the evil effects ascribed to ergot are the result of its misuse. Under no circumstances should it be given during labor until the os uteri is fully dilated or fully dilatable. When given after delivery it checks hemorrhage, produces permanent contraction, and by sealing up the uterine vessels the liability to bacteriologic invasion is lessened. In the majority of multiparous patients it may be administered during the puerperal period with the object of stimulating the muscular tonicity and accelerating the process by which it returns to a normal condition.

EWART and ROLLESTON gave the details of *an autopsy at which the left side of the heart had been found to contain a large clot, plainly ante-mortem*, and which was attached to the left wall of the left auricle, and passed through the mitral valve into the ventricle. The valve was normal. The patient, a woman aged forty-three, after recovery from an attack thought to be pleuropneumonia, developed the symptoms of mitral stenosis, with failure of compensation. At first there was noticed a slight systolic murmur with a snappy first sound. Later a presystolic murmur developed. The thrombus was old internally, a recent clot having been added to it. The viscera showed the changes met with in cases of advanced mitral disease.

ROUTH, at a meeting of the Obstetrical Society, held June 2d, read a paper on *parturition during paraplegia*. A multipara with complete paraplegia below the level of the sixth dorsal vertebra, of traumatic origin, was admitted into the hospital half an hour after the accident. She was at the time nearly seven-months' pregnant. Two months later—that is 261 days after the last menstruation, labor came on without the patient feeling any pain. The first stage lasted ten hours, and the second 2¼ hours. The only sensation during a "pain" was a tight feeling at the epigastrium, inclining her to hold her breath. As the head was passing the vulva, the patient cried out—apparently a reflex act. Routh concludes that the act of parturition is partly automatic, partly reflex, and that direct communication between the uterus and the lumbar enlargement of the cord through the medium of the sympathetic nerve is probably essential to the regular and co-ordinate contraction and retraction of the uterus as occurring in normal labor. It also seems probable that the uterus is able automatically to expel its contents even when completely separated from the spinal cord, but such expulsion would be irregularly or imperfectly carried out.

At a meeting of the Epidemiological Society, held May 21st, DAVIDSON read a paper on the *seasonal fluctuations of epidemic diseases*, which recur constantly in every country, but vary in different climates and seasons. In seeking the causes of these variations, a distinction must be made between diseases like cholera, malaria, enteric fever, etc., which are due to the action of microbes existing in the soil, and diseases such as smallpox and measles, for the latter can be influenced only indirectly by meteorologic conditions, as these may affect the individual. Why epidemics occur usually in winter and spring, it is not easy to say. In Europe, India, and America, smallpox approximately follows the temperature curve, though it begins to rise in winter when the temperature falls, but attains its maximum during the spring. The regular appearance of smallpox during the winter has been ascribed by Fluegge to the aggregation of persons indoors, the less frequent change of clothing, and neglect of bathing; but this will not explain the occurrence of the same general curve in India, where the domestic habits do not conform to those of Europe. During 1868, smallpox was prevalent in Madagascar, with a temperature ranging between 90° and 100° F., while during the winter of 1870 in the Hudson Bay Territory an epidemic was not checked in the least by a daily temperature of 4° below zero. Weather

conditions which tend to produce catarrh of the pharyngeal and respiratory mucous membranes will, of course, increase the number of cases of measles, scarlet fever, and diphtheria by lessening the power of resistance of that part of the body by which the microbic cause of these diseases enters the organism. Similarly, catarrh of the intestine favors the development of cholera and typhoid fever.

RANSOME agreed with the reader as to the influence of catarrhal affections favoring infection, but he has also observed that seventy per cent. of the outbreaks of scarlet fever are preceded by a fall of the barometer, thus suggesting the sudden escape of the poison with the ascent of sewer- or infected ground-air.

Berlin.

PURPURA FULMINANS, OR ERYTHEMA EXUDATIVUM MULTIFORME—PASSAGE OF ESOPHAGEAL BOUGIES WITH THE AID OF THE ESOPHAGOSCOPE—A CASE OF HODGKIN'S DISEASE RESULTING FROM A BLOW ON THE SHOULDER.

At a session of the Medical Society, held May 12th, GEORGES presented a boy, aged two years, in whose case he had made a diagnosis of *purpura fulminans*. The child never had had any infectious disease, and, except for slight symptoms of rickets, appeared perfectly healthy until he was suddenly taken ill with obstipation, vomiting, and high fever. Some powders, probably of calomel, were administered, and a green diarrhea resulted. Eight days later the fever had disappeared and the boy was entirely well. Two weeks afterward the mother noticed a few red flecks on the buttocks. The next morning there was vomiting of blood, the appearance of a large blue-red spot on the calf, and a swelling of the opposite foot. On the following morning, the third day of the disease, there were several bloody dejections, and the ears, cheeks, hands, feet, and backs of both thighs and buttocks were swollen and the seat of numerous ecchymoses and bullæ, from the size of a pin-head to that of a silver mark piece. The scrotum was swollen and of a deep red color. The internal organs presented no lesions. Examination of the blood and urine showed nothing abnormal. There was elevation of temperature up to 103.5° F.

The case was remarkable on account of the rapidity with which the hemorrhages occurred. The treatment consisted of rest in bed, a proper diet, and the administration of iodid of potash.

LASSAR looked upon the case as one of acute erythema febrile bullosum rheumaticum, the disturbance of the digestive tract and the pains with which such cases are often affected pointing to the relation to gastrorheumatic troubles. Under these circumstances he gives as large doses of salicylate of soda as the age and condition of the patient will warrant.

HEUBNER said that all the cases for which Henoch had proposed the name purpura fulminans had ended fatally. Such a case, however, he never had had the good fortune to see. Further, the occurrence of bullæ was not in accord with the classic picture of that affection. The diagnosis of erythema exudativum multiforme was, in his opinion, the correct one.

JACUSIEL reported the following interesting and unusual case: A young man, aged twenty, was struck on the shoulder by a board. Soon after there developed at the site of the injury a tumor, which grew for four years without symptoms. Then in the neighborhood of the tumor, in the neck and around the scapula, there were found a number of enlarged glands. The case progressed unfavorably in spite of a long-continued treatment with arsenic, the liver and spleen became much enlarged, ascites set in, and death followed—eight years after the injury was received. A complete autopsy was not permitted, but examination of the tumors showed them to have no characteristic structure, giant cells being found only in two preparations. A probable diagnosis of Hodgkin's disease was made, which, it was admitted, was only a cloak for inability to arrive at a proper solution of the malady.

VIRCHOW, who had examined the tumors microscopically, said that an exact diagnosis was impossible, but that the glands presented the appearance of malignant glandular sarcoma (lymphosarcoma), or, as commonly called, Hodgkin's disease.

ROSENHEIM has been able to pass a sound with the aid of the esophagoscope in the case of two patients suffering from stricture of the esophagus, although without this instrument he repeatedly failed in the attempt. In both patients the stricture was at a distance of twenty-eight centimeters (eleven inches) from the teeth. The cause of constriction in one instance was a carcinoma, and in the other it was the the scar following the swallowing of a strong alkali. In the first-named case relief was naturally only temporary; in the latter an opening which at first would admit only the finest probe, and which was found only with the greatest difficulty even with the esophagoscope, was so far dilated by treatment as to permit the patient to swallow food of the consistency of oatmeal without difficulty, while a seven-millimeter bougie could be easily passed.

SOCIETY PROCEEDINGS.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting, Held Wednesday, April 21, 1897.

L. DUNCAN BULKLEY, M.D., President *pro tem.*, in the Chair.

DR. S. H. DESSAU reported a case of diphtheria in which brilliant results were obtained by the use of antitoxin. The patient was a child between two and a half and three years old who was brought to the West Side Dispensary. There was very difficult, harsh breathing of a croupy character, and the case was diagnosticated as laryngitis by his assistant. The speaker saw the child a day later, and examination revealed the fact that the tonsils and a portion of the soft palate and lower posterior pharynx were covered with a grayish exudate. It was decided to employ antitoxin, although the prognosis was exceedingly bad. The Board of Health preparation was given, five cubic centimeters, representing 2500 units, being injected. The child immediately began to improve and is now convalescent.

DR. J. RIDDLE GOFFE spoke of the value of combined operations in saving time and nervous wear and tear to the patient, and reported the history of a case in which he first curetted the uterus and packed it, and then shortened the round ligaments by the following new method: An incision was made in the anterior vaginal fornix through which the uterus was delivered, and the round ligaments were then caught up and shortened by being folded upon themselves and stitched together. The uterus was then replaced and an operation for repair of the lacerated perineum performed, after which the patient was turned upon the left side, an incision made through which a floating kidney was found, brought up, and stitched in the wound. The patient rallied well, although she was pale, anemic, and in a wretched condition before the operation. The entire procedure lasted an hour and three-quarters, and the anesthetic used was chloroform, about three ounces being given.

DR. R. A. MURRAY believed the principle a correct one, and thought it advisable to combine such operations whenever one did not preclude another, as, for instance, an operation for repair of the perineum when drainage *per vaginam* is to be employed, in which case good union of the perineum cannot be obtained.

DR. WILLIAM STEVENS said he had recently had the misfortune to see a man die from the effects of chloroform. About half an ounce of the anesthetic had been administered, when the man threw back his head and expired in less than five minutes, although half a dozen doctors tried to resuscitate him. The man had been somewhat intemperate in the use of alcohol, and possibly there was some carelessness in administering the chloroform.

DR. A. M. JACOBUS thought the danger in chloroform anesthesia lies in the fact that too much of it is given in the beginning. Instead of commencing with a few drops, as much as half a teaspoonful is often poured on the mask. In the case mentioned death was probably due to sudden paralysis of the heart.

Dr. Jacobus then reported a case of belladonna poisoning caused by wearing a belladonna plaster. The patient was a woman for whom he had prescribed fluid extract of hydrastis for metrorrhagia at the Presbyterian Hospital Dispensary, the drug being put up for her at the dispensary drug department. After taking two or three doses of it she began to feel and act queerly. She therefore took the bottle to a drug-store, where the clerk told her it contained laudanum. She immediately hurried to the speaker's office in a terrible state of excitement. Her face was flushed, the pupils widely dilated, the throat dry, she complained of numbness, and was dazed and unable to talk connectedly. The symptoms all pointed to belladonna poisoning, but no connected history could be obtained. The medicine, which she had with her, was found to be fluid extract of hydrastis, and the speaker was at a loss to account for the symptoms until, upon stripping her, he discovered that she was wearing a belladonna plaster. She began to improve when this was removed, and was soon entirely well.

DR. S. H. DESSAU said that hydrastis might easily be mistaken for laudanum, as the odor is quite similar, but thought such an error on the part of the drug-clerk was unpardonable. The yellow staining of the fingers by hydrastis at once makes clear the difference, and, moreover, its physiologic effects are entirely unlike those of opium. The symptoms complained of by the woman were more like those following a very large dose of quinin.

DR. MURRAY said he was very careful in prescribing belladonna, and always told the patient the nature of the drug, for he had seen several cases of poisoning from its use. He expressed the opinion that some people, especially children, show an idiosyncrasy in regard to belladonna.

DR. JOSEPH COLLINS said it seemed to him that children are very tolerant of belladonna, and that he has often given a dose to a child which would produce unpleasant symptoms in an adult.

DR. J. H. FRUITNIGHT reported an interesting case in which there was loss of motion and sensation in both extremities. The patient was a woman, sixty years of age, who had always been perfectly well up to the time of the attack. On attempting to rise one morning she found that there was a total loss of motion and sensation in the lower extremities. There were no symptoms referable to the central nervous system, and no cause could be found for the paraplegia except the fact that she had not passed much urine. Upon passing the catheter, only a small amount of urine was found in the bladder. Diaphoretics were administered, and a considerable quantity of urine was voided, which was found to contain granular, epithelial, and hyalin casts, albumin, and some pus-cells. Improvement soon followed, and the patient is now able to walk about. With such a result, the speaker thought it seemed improbable that there was any cerebral lesion, and considered the paraplegia due to uremic poisoning caused by suppression of urine.

DR. COLLINS thought the case neither strictly organic nor functional. The lesion was probably a spasm of the blood-vessels in the cord which prevented transference from both above and below, such a condition being quite possible. He doubted whether there was complete sensory paralysis, for, as he understood it, the patient had first tested herself in this regard. Unless both tactile and pain sensation were tested, he thought the case one of motor paraplegia due to uremic poisoning.

DR. COLLINS reported two cases which he had recently seen with Dr. Brewer. The first was that of a man who had an ordinary suppurative cellulitis of the posterolateral portion of the neck which was incised. The patient was apparently doing well when he began to develop symptoms of what was supposed to be cerebral abscess. There was a temperature of 102° F., the pulse was rapid, and the mental condition was impaired. There was no stiffness of the neck and no reflexes. The man died shortly afterward, and at the autopsy an extensive cerebrospinal meningitis was discovered.

The second case was that of an old woman, from whom a tumor of the breast has been removed. The wound remained open and was filled with large granulations, and

there was a condition of general sepsis present. She developed stiffness of the face and one side of the tongue, then of one side of the body and then of the other, and a slight arching of the back. There were no symptoms of hysteria. The case was at first supposed to be one of meningitis, but it was noticed that the stiffness disappeared under manipulation, and it seemed probable that it was a toxic manifestation. She was given calomel and Carlsbad salts and a cold douche, with the result that she recovered.

TYPES OF INFLUENZA IN 1896–97

was the subject for the evening's discussion.

DR. ROBERT MILBANK said that he had seen many cases of grippe during the past winter, but had met with fewer cases of pneumonia and serious affection of the respiratory organs than ever before. The cases which struck him most forcibly were those which were accompanied or followed by intercostal rheumatism. He had seen a number of cases complicated by throat trouble, such as suppurative tonsillitis.

DR. RICHARD KALISH said that his experience with grippe was limited to those cases in which there was some eye or ear complication. He had seen few cases in which there was any ear involvement, but had treated many for catarrhal conjunctivitis which developed during convalescence and was usually of short duration.

DR. J. BLAKE WHITE said that whereas some years back the respiratory organs seemed to be the ones most affected by grippe, his experience during the past year went to show that the digestive organs suffered most. He had seen few cases of pneumonia, but quite a number in which there were throat complications. He had found bromoladin especially useful in relieving the irritation of the throat in these cases. Opiates he had found not so useful as subnitrate or subgallate of bismuth, together with resorcin; he prefers carbonate of ammonia with salicylate of soda.

DR. DESSAU spoke of the disease in children and thought the type had changed during the last few years. Formerly there were many violent symptoms, such as high fever, delirium, convulsions, and semi-coma, accompanied by pneumonia, pleurisy, etc., while of late the symptoms have been of a much milder type, and in many cases have been attributed to catarrh or some form of digestive disturbance, until the persistence of the attack excited suspicion, and the successful results following a specific form of treatment revealed the true nature of the disease. The principal feature of the mild form of influenza in young children is a teasing cough, worse at night, occurring in paroxysms at times, with but little expectoration, accompanied by a few râles of the dry, subcrepitant variety. In the majority of the cases observed by the speaker there was no marked involvement of the nasopharynx, although there was a mild pharyngitis. In this connection he referred to concealed forms of diphtheria located in the nasopharynx. A differential diagnosis can be made by rhinoscopic examination and from the appearance of the secretion. In diphtheria it is thin, viscid, and seems to run down the posterior wall in a stream; in influenza the discharge is almost green in color and quite thick, showing itself below the soft palate in lumps. In treating influenza he has used with great success a one-per-cent. solution of carbolic acid, with a little glycerin added.

DR. FRUITNIGHT was of the opinion that the type of the disease had been less severe during the past year, and that it would continue to diminish in the course of time, and would eventually disappear. He had seen but little pneumonia, the most common complications being nose, throat, and middle ear diseases, which, however, yielded rapidly to treatment. He had seen little of the neurotic form of the disease which was so common in the first epidemic, but had been struck by the frequent occurrence of neuralgia, especially of the frontal sinuses, in these cases. In his experience children had not been so generally affected as old people.

DR. MURRAY said that in every case he had seen the frontal headache was an important feature. Nose, throat, and ear complications were also common. He is in the habit of giving the patient calomel, and then prescribes phenacetin and codein to relieve the headache. The intense prostration which follows the disease demands tonics.

DR. A. E. BIESER, present by invitation, said that, clinically, the disease appeared in four types, affecting respectively the respiratory, the circulatory, the nervous, and the gastro-intestinal systems. Of late years the disease has been of a milder character than that which was seen in 1891, and the cardiac failure, which was then so common, is now rarely seen. He expressed the opinion that much of the heart failure in grippe is due to the use of coal-tar preparations, and said that at one time when the supply of phenacetin had given out many druggists substituted acetanilid. He, therefore, did not employ the coal-tar preparations in the treatment of influenza, but replied upon whisky, quinin, and tonics. If it were necessary to treat individually the symptom *pain*, he would prescribe opium.

DR. JOHN F. ERDMANN presented a specimen of ruptured tubal pregnancy taken from a patient from whom, fourteen months before, he had removed the opposite tube for a similar condition. The woman, who was twenty-six years of age, was in collapse when first seen, with symptoms of concealed hemorrhage, pulse 144 to 148, respirations rapid and shallow, rupture evidently having occurred some days before. The abdomen was opened and the ruptured tube removed. During the operation six pints of normal salt solution were injected. The patient was making a good recovery.

DR. ERDMANN also exhibited a specimen showing sarcoma of the testicle, which was removed from a man thirty-five years of age in whom there was no family history of malignant disease, and no specific history. Some years ago he had a hernia. When first seen a tumor of the left testicle, about the size of an egg, was found. It was not translucent. Two weeks later the tumor had greatly increased in size, some fluctuation was noticed, and the case was thought to be one of hydrocele, although the rapid growth pointed to sarcoma of the testicle. Operation was advised and the growth removed. A

hydrocele containing about four ounces of fluid was found in the lower part of the tumor, which was evidently sarcomatous, although no microscopic examination had as yet been made.

NEW YORK ACADEMY OF MEDICINE—SECTION ON ORTHOPEDIC SURGERY.

Stated Meeting, Held May 21, 1897.

A. B. JUDSON, M.D., in the Chair.

DISLOCATION OF THE PERONEUS LONGUS AND PERONEUS BREVIS.

DR. W. R. TOWNSEND presented a young man, twenty years of age, whose peroneal tendons were easily dislocated to the front of the malleolus. The right foot had been affected in this way for many years, the left only during the past seven months. On walking and on rising from a chair the tendons would slip over the malleolus and cause considerable disability until they were replaced by the hand. The boy did not have much pain, but was easily fatigued. Dr. Townsend briefly reviewed the literature of the subject. Dr. L. A. Sayre reported a case in 1870. In 1876, Dr. Beach of Boston reported eighteen cases, including one of his own. Gillet de Grandcourt reported ten cases in 1878. Treves said it is caused by sudden and violent contraction of the muscles when the limb is in such a position as to favor displacement, that it may be treated by means of pads and pressure, and that in some cases it is advisable to replace the tendons and retain them by suturing the torn edges of the sheath.

DR. R. WHITMAN suggested deepening the channel, replacing the tendons in the groove in the bone and giving them a new covering of periosteum or fibrous tissue. This might be possible without removing the sheath.

DR. A. B. JUDSON said that the peronei are comparatively small and unimportant muscles. To a slight degree they assist the muscles of the calf to extend the foot on the leg. Aside from this their function is to evert the sole of the foot, and this function is not seriously impaired by displacement of the tendons to the front of the malleolus. He thought that the patient would derive no benefit from an operation, and that practically no treatment was necessary.

DR. WHITMAN said that the discomfort caused by the slipping of the tendons must be considerable, and that the boy would be better off if this could be stopped.

DR. TOWNSEND said that the patient had recognized the disability and had sought advice on account of it. He thought an attempt should be made to prevent the slipping of the tendons by the application of pads and pressure before an operation was decided upon.

A CASE OF TRAUMATIC SPINE, WITH RECTAL AND VESICAL PARALYSIS.

DR. J. P. FISKE presented a patient, a man thirty-three years of age, who had been under treatment during fourteen months, and under observation thirty-four months, from the time of the injury. When first seen he was in a condition of complete helplessness. He could not move in bed, and if turned or moved by his attendants he suffered the greatest pain. Urine was constantly flowing, and he was not conscious of the passage of feces. Recovery had been complete, with control of the sphincters. He was now walking without assistance and had returned to his work. The accident had been attended by great violence. While working as a harness-maker the flooring gave way under him as he was carrying a heavy load and his right leg went through a hole. The spine was forcibly flexed and he became unconscious. The twentieth day after the injury, rigidity of the spine and muscular spasm were marked. There were complete paralysis from the waist down, as regards voluntary motion, incontinence of urine and feces, and pain in the dorsolumbar region, aggravated by the slightest motion. Crepitus and spinal deformity were absent. The diagnosis was severe traumatism of the spine, concussion of the cord, more or less complete rupture of the ligaments, and, possibly, partial dislocation of one of the lumbar vertebræ, with spontaneous reduction. He was at once encased in plaster-of-Paris from the axillæ down to and including the pelvis, with immediate and considerable relief.

The plaster jacket was renewed when necessary and was worn day and night during ten months. This treatment, with massage, frequent change of position, alcohol baths, and such medication as was required in his poor general condition and for the vesical symptoms, was attended by gradual recovery. There were no bedsores. At the end of four months he sat up in bed and was lifted into a steamer-chair. After seven months he had regained control of his rectum and could walk a short distance with the aid of crutches. From this time his recovery was more rapid. The incontinence of urine persisted longer than the other symptoms, but ceased after a time, and during the past twelve months he had been perfectly well. This case clearly shows the immediate and permanent relief which follows absolute fixation after severe spinal injury. Patients treated without persistent fixation are likely to be constantly troubled with pain in the back and legs, and to present the symptoms of railway spine. Dr. Fiske added that these cases are often considered hopeless. He had presented the patient as an example of what continued fixation and supporting treatment would accomplish.

AN ISCHIATIC CRUTCH USED IN PLACE OF AN ARTIFICIAL LIMB.

DR. A. B. JUDSON presented a boy nine years of age, who was wearing an ischiatic crutch instead of axillary crutches or an artificial limb. Amputation had been performed below the knee after a railroad accident. The case illustrated the comfort and ability which this apparatus was able to secure in the treatment of those affections of the lower extremity which require that the weight of the body be removed from the affected limb. This use of the skeleton of the pelvis is not new. Ischiatic support is a feature of Dr. Fayette Taylor's hip-splint, described in 1867. In fact, the long hip-splint is an ischiatic crutch with the added function of traction. In the instrument shown the crutch consisted of an upright steel piece,

adjustable in length to meet the growth of the patient, with an india-rubber crutch tip at the foot and a semi-circular pelvic band, carrying a single perineal strap. It also had a shoulder strap which transferred the weight of the splint to the opposite shoulder, a steel knee-piece restraining the limb anteroposteriorly, and a webbing strap above the knee. There was no customary leather strap surrounding the splint and the ankle because the lower part of the leg was absent. Although the stump was flexed in walking, there was no possibility of ankylosis interfering with the subsequent use of an artificial leg, because the knee was free from inflammation, which necessarily preceded ankylosis. The apparatus was easily provided with a joint at the level of the knee, and this is desirable in convalescent hip disease, if the limb is so long as to be inconvenient if constantly extended.

OSTEOTOMY FOR INVERSION IN CLUB-FOOT.

DR. TOWNSEND, at the request of Dr. V. P. Gibney, presented a girl, five years of age, whose feet had been treated by Phelps' operation, by braces, and by building up the outer side of her shoes. On February 16, 1897, to correct inversion, subcutaneous osteotomy of both tibiæ had been performed, and also right achillotomy. The lower fragments of the tibia were rotated outward and the limbs put in plaster-of-Paris. The inversion had been entirely corrected. Mr. R. L. Swan of Dublin, who had described this operation, after an experience in the treatment of twenty patients with good results, had said that rotation of the limb as the result of equinovarus, and which persists after the latter is corrected, is due to trouble below the knee; that when these patients walk and attempt to toe out they throw the entire limb out by rotation of the thigh, and the gait is awkward. The toeing in is due to the fact that the entire leg is rotated inward and the external malleolus is too far forward. To overcome this, he divides the tibiæ only, rotating and bringing the lower fragment outward, thus placing the internal malleolus further forward, as regards its relation with the external malleolus.

DR. JUDSON said that, for the prevention of inversion, he relied on the thorough correction of the equinovarus. If this is done, the child avoids toeing in, either unconsciously, or, later, from pride.

DR. WHITMAN said that division of the bones of the leg is a very old operation for the correction of the in-toeing of club-foot.

DR. TOWNSEND said that Mr. Swan divides only the tibia and is very careful not to divide the fibula.

DR. TAYLOR had noticed that the feet in the case shown had not been fully corrected before the operation. The child walked very well now and the result was very good, but it seemed uncertain that this condition would prove permanent. He believed that the persistence of inversion in many of these patients is due to incomplete correction of the deformity.

CALCANEOVALGUS, WITH SUBLUXATION OF THE ASTRAGALUS.

DR. TAYLOR presented a baby affected with congenital calcaneovalgus, with a very unusual degree of dislocation or subluxation forward of the astragalus. The heel was unduly prominent. The astragalus was displaced forward, while the fibula was behind its normal position. Treatment had consisted of gradual reduction and plaster-of-Paris fixation.

COXA VARA.

DR. WHITMAN presented a boy, sixteen years of age, affected with a bending of the neck of the femur, which condition had existed about twelve months. He walked with a limp and eversion of the foot. The elevation and prominence of the trochanter was increased by flexion. Limitation of abduction, actual shortening of one-half inch, with marked apparent shortening from habitual adduction, all were present. The treatment would be to remove the weight of the body from the weak femur by the use of a perineal crutch, massage, forcible stretching of the adductors and, if necessary, subtrochanteric osteotomy. Bending of the neck of the femur is not due to general rickets or the rickets of adolescence, of which there are cases on record. There is, however, a weakness of adolescence which, under favorable conditions, causes this and similar deformities.

REVIEWS.

HYPNOTISM AND ITS APPLICATION TO PRACTICAL MEDICINE. By OTTO GEORGE WETTERSTRAND, M.D., of Stockholm. Authorized Translation by HENRIK G. PETERSEN, M.D., together with Medical Letters on Hypnosuggestion, etc., by HENRIK G. PETERSEN, M.D. New York: G. P. Putnam's Sons, 1897.

MUCH has been written on hypnotism and suggestion, and much of it is of but little value. To the present book this characterization cannot apply, for the author, while an enthusiast, is not fanatically devoted to this agent as a panacea for all earthly ills. The work is more practical than theoretic, and embodies the results of critical powers of observation. It gives an account of the various ailments to the relief of which the author has applied this therapeutic measure and presents the cases, 128 in number, in which the results have justified the means.

The author's conclusions are modest. He regards functional nervous diseases as most adapted to treatment by suggestive therapeutics. He distinctly says: "I do not see a panacea in hyposuggestion, to the exclusion of all other means and methods, nor do I in the least wish to assert that its use is always successful." Everyone interested in psychotherapy will find some points of interest in the book.

DIPHTHERIA AND ANTITOXIN. By NESTOR TIRARD, M.D. London: Longmans, Green & Co., 1897.

THIS book deals with the author's personal experience in the treatment of diphtheria. He is a devoted advocate of the use of antitoxin, a position justly based on the record of his cases.

The book presents nothing new, its merit being in the felicitous manner of the presentation of the subject.